Simulacra Pugnae: The Literary and Historical Tradition of Mock Battles in the Roman and Early Byzantine Army

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IN THE SPRING of 622, the emperor Heraclius set out from Constantinople into Anatolia for his first campaign against the Sasanian Persians, an event which marks the beginning of the Eastern Roman Empire's recovery after two decades of continuous Persian success. Preparatory to actual confrontation, he reorganised the forces he had assembled and subjected them to rigorous and systematic training, as described by the contemporary poet George of Pisidia. One notable feature of this training was the introduction of what the poet calls an "innovation" (καινούργημα), in which Heraclius divided his army into two opposing forces and ordered them to fight large-scale mock battles.[1] These sham fights apparently not only tested the weapons skills of the individual soldier, but also improved the tactical co-ordination of units within the battle line, and offered as realistic an experience of combat as was to be found outside genuine battle. Such large-scale simulated battles, as distinct from one-to-one combat between comrades, are not generally recognised as a standard element in the traditional training system of the Roman army, and this supports George of Pisidia's assertion of novelty. The whole subject of how the army trained, however, especially in the later Roman

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[1] *Exp.Pers*. 2.150: A. Pertusi, *Giorgio di Pisidia, Poemi* I *Panegirici epici* (Ettal 1959) 102–104; repr. *Carmi di Giorgio di Pisidia*, with a different Italian transl. by L. Tartaglia (Turin 1998).

period, is relatively neglected. Although the basic training of the imperial Roman legionary is reasonably well established, largely following the regime outlined by Vegetius, Roman tactical training generally, and its particular importance in creating and maintaining individual morale, discipline, and esprit de corps, has been largely overlooked.[2] The author's purpose is to examine the evidence for simulated battles as important exercises in the training of the Roman army dating back at least to the third century B.C.[3]

Taking as its retrospective point d'appui Heraclius' "innovation" in the early seventh century, the clearest instance of the practice, this study seeks to identify its antecedents in a long-standing military tradition attested in both technical military handbooks and narrative historical sources. It will also investigate the theme of mimesis in both genres, and in particular assess the problems facing an ancient author in composing a technical treatise. Ultimately this literary survey aims to explain the practical considerations surrounding an important aspect of military training, as well as, more broadly, to shed light on the

[2] The neglect was most recently bemoaned by Y. Le Bohec, *The Roman Imperial Army* (Paris 1989; transl. London 1994) 51, 105–106, 119, who identifies "an important gap." Le Bohec himself (105–119) is concerned more with discipline than technical training. By far the most comprehensive recent survey is G. Horsmann, *Untersuchungen zur militärischen Ausbildung im republikanischen und kaiserzeitlichen Rom* (Boppard 1991: hereafter HORSMANN). For selected aspects of Roman military training see the relevant papers collected in R. W. Davies, *Service in the Roman Army*, edd. D. Breeze and V. Maxfield (Edinburgh 1989). See also M. P. Speidel, *Riding for Caesar: The Roman Emperors' Horse Guards* (Cambridge [Mass.] 1994) 109–116, 148–150. The subject is largely neglected in some recent studies of Roman warfare in which the prevailing emphasis on morale and psychology would seem to require its inclusion; see A. K. Goldsworthy, *The Roman Army at War 100 BC – AD 200* (Oxford 1996: hereafter GOLDSWORTHY) 251.

[3] The existing bibliography is slim and concerned primarily with training weapons. Mock battles are briefly mentioned by R. W. Davies, "The Daily Life of the Roman Soldier," *ANRW* II.1 (1974) 299–338, at 311, and "Fronto, Hadrian and the Roman Army" in *Service* (*supra* n.2) 71–90 (= *Latomus* 27 [1968] 75–100), at 82–83. Horsmann 140–43, 149–150, 175–177, only touches upon the subject. I. P. Stephenson, "Roman Republican Training Equipment: Form, Function and the Mock Battle," *JRMES* 8 (1997) 311–315, is cursory and concerned largely with archaeological evidence for weaponry.

interplay between literary tradition and the practices and institutions of the Roman army.

Heraclius and the Roman army

The arrangements Heraclius employed prior to his first campaign against the Persians offer a rare instance of a historical narrative, in the form of the verses of George of Pisidia, supported by a near-contemporary military handbook, the *Strategicon* of the emperor Maurice. George of Pisidia (*Exp.Pers.* 2.120–162) supplies a detailed, if florid, account of the training exercises organised by Heraclius in the spring of 622 and the subsequent operations of the army. He writes that, having crossed into Anatolia, Heraclius immediately "began new exercises for the army" (καινῶν ἀπάρχῃ τοῦ στρατοῦ γυμνασμάτων).[4] After a highly poetic description of the soldiers' appearance, he continues (135–144):

ἐπεὶ δὲ συνταγέντες ὡς ἐναντίοι
ἔσφιγξαν αὑτῶν ἀσφαλῶς τὰ τάγματα,
ὤφθη τὰ τείχη τῶν ἐνόπλων κτισμάτων,
καὶ συρραγέντων τῶν στρατευμάτων ὅλων
ξίφος μὲν ἀσπὶς καὶ ξίφη τὰς ἀσπίδας
ὤθουν βιαίοις πανταχοῦ συγκρούσμασι,
καὶ με⟨σ⟩τὰ πολλῶν αἱμάτων τὰ φάσγανα
ὁ σχηματισμὸς τῆς μάχης ἐδείκνυε,
καὶ πάντα φρικτά, καὶ φόβος καὶ σύγχυσις,
καὶ πρὸς φόνους σύννευσις αἱμάτων δίχα.

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[4] The location of these events is never specified but does not effect the current argument. George describes Heraclius drawing together his army from scattered positions (2.55–56), but the phrasing is vague. The assertion of J. D. Howard-Johnston, "Heraclius' Persian Campaigns and the Revival of the East Roman Empire, 622–630," *War in History* 6 (1999) 1–45 (hereafter HOWARD-JOHNSTON), at 3 n.11 and 36, that these events took place in the safety of Bithynia is possible but by no means compelling. Similarly, Tartaglia (*supra* n.1) 92 n.54 believes the location to be somewhere in northwestern Anatolia. A general muster nearer the frontier, however, is not impossible. The only topographical reference to army mobilization in these early campaigns is Sebeos *Hist.* 38, who admittedly conflates different aspects of the campaigns of 622 and 624 into one "composite" campaign, but presumably because the two were very similar in his sources; Sebeos has Heraclius join his collected forces at Cappadocian Caesarea, a standard location for such activities.

When they had been drawn up as enemies, they closed securely
their respective ranks, and they appeared like the walls of
armoured ramparts.[5] And then, when all the forces rushed to-
gether, sword and shield upon sword and shield everywhere
pressed with violent blows. The simulation of battle displayed
swords drenched with blood, and all the frightful spectacles and
fear and confusion and murderous intent, but without bloodshed.

George then praises the particular genius of the emperor (145–
152):

δεῖξαι γὰρ αὐτοῖς ἐμφρόνως ἠπίστασο
πρὸ τῆς ἀνάγκης τῆς ἀνάγκης τοὺς ⟨τρ⟩όπους,
ὅπως ἕκαστος τῆς ἀκινδύνου σφαγῆς
λαβὼν ἀφορμὰς ἀσφαλέστερος μένοι.
λέγειν μὲν οὖν ἕκαστα καὶ τὸ ποικίλον
ἐκεῖνο καινούργημα τῆς τέχνης γράφειν
ἐξασθενεῖ μου τῆς ἀτόλμου καρδίας
ὁ νοῦς ἐναύλῳ τῷ φόβῳ κλονούμενος.

For wisely you knew how to show them the forms of the struggle
before the struggle, so that each man, getting his first experience
in a combat free from danger, might be safer. My mind, thrown
into confusion by the recent fear, is too weak, my heart too
cowardly, to give a blow-by-blow account or to narrate that
intricate innovation to the [military] art.

George of Pisidia's idiom is of course not an ideal vehicle for
technical detail, but the evidence of this author, well connected
with many of the individuals involved, is essentially credible.[6]
Heraclius commissioned George's poem immediately after this
campaign, in 623, and it was almost certainly recited in the
emperor's presence. Several passages even suggest George's
autopsy of events, though the matter is uncertain; his status as
an eyewitness is in any case less important in interpreting his

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[5] Literally, "the walls of armoured ramparts were seen."

[6] See Howard-Johnston, and his "The Official History of Heraclius' Persian
Campaigns," in E. Dabrowa, ed., *The Roman and Byzantine Army in the East*
(Krakow 1994) 57–87.

account than an appreciation of his epic style and encomiastic purpose.[7]

A prose version of the same exercises, drawing entirely upon George's poem, appears in the *Chronographia* of Theophanes Confessor.[8] This is preceded, however, by a shorter doublet taken from a different and unidentified, but presumably closely related, source (303.12–17):

> τούτους δὲ γυμνάζειν ἤρξατο καὶ τὰ πολεμικὰ ἔργα ἐξεπαίδευ-
> σεν. διχῇ γὰρ διελὼν τὸν στρατὸν παρατάξεις τε καὶ συμβολὰς
> πρὸς ἀλλήλους ἀναιμωτὶ ποιήσασθαι ἐκέλευσεν, κραυγήν τε
> πολεμικὴν καὶ παιᾶνας καὶ ἀλαλαγμὸν καὶ διέγερσιν ἔχειν τού-
> τους ἐδίδασκεν, ἵνα, κἂν ἐν πολέμοις εὑρίσκωνται, μὴ ξενίζωνται,
> ἀλλὰ θαρροῦντες ὡς εἰς παίγνιον κατὰ τῶν ἐχθρῶν χωρήσωσιν.

> He began to train them and instruct them in military deeds. Dividing the army into two, he ordered the battle lines to make attacks on each other without bloodshed; he taught them the battle cry, war-songs, and shouts, and how to be on the alert so that, even if they found themselves in a real war, they should not be unaccustomed, but should courageously move against the enemy as if it were a game.

Modern interpretations of these passages have stressed different aspects of and contexts for these exercises, but with a consistent emphasis on their peculiarity. Darko saw these events as unusual, even unique, and suggested that George's account relates Heraclius' introduction of new cavalry tactics.[9] Oikonimidès similarly regarded these exercises, the main ac-

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[7] *Exp.Pers*. 2.122–126; 3.131–136, 253–261. For possible interpretations see Howard-Johnston 8 n.24. Mary Whitby (pers. com.) characterises these passages as a panegyrical *topos*.

[8] Ed. de Boor 304.3–11. For Theophanes' complete dependence on George of Pisidia in this passage see L. Sternbach, "De Georgii Pisidae apud Theophanem aliosque historicos reliquiis (Analecta Avarica)," *Rozpr.Akad.Umi., Wydz. Filol.* II 15 (1900) 1–107, at 9–10; Howard-Johnston 60, 64.

[9] E. Darko, "Die militärischen Reformen des Kaisers Herakleios," *Actes du IV e Cong. Intern. des Études byzantines* (BIABulg 9 [1935]) 110–116. Darko's arguments for Heraclius' authorship of the *Strategicon* are unconvincing.

tivity of 622, as an exceptional preparation for the subsequent campaigns.[10] Haldon saw this episode as evidence for the army having fallen into such a parlous and disorganised state that Heraclius had to retrain it completely, starting with the most basic manoeuvres.[11] Howard-Johnston (36), while noting the practical aspects of these tactical exercises, the effects of which "showed in all subsequent campaigns," emphasised their morale-boosting character within a particularly desperate strategic context. However, the style and technique of George's account, together with his proximity to events, have tended to create a misleading impression. The newly-arrived general who takes over a demoralised ragbag and quickly transforms it into a fighting force is a standard topos of classical (and indeed modern) military literature, which seeks to enhance the achievements of the new commander.[12] With hindsight there is a strong tendency to see these apparently new training exercises as the essential preparations for Heraclius' spectacular successes later in the 620s. Even if this were the case, George of Pisidia, writing in 623, cannot possibly have made such a causal link between the exercises of 622 and Heraclius' victories in 625–628. In short, George did not know what was to come; indeed the outcome of the Persian war remained in serious doubt for several years thereafter, and in assessing George's purpose in recording these exercises we should avoid investing his account with a

[10] N. Oikonimidès, "A Chronological Note on the First Persian Campaign of Heraclius (622)," *BMGS* 1 (1975) 1–9.

[11] J. F. Haldon, *Recruitment and Conscription in the Byzantine Army, 550–950: A Study on the Origins of the Stratiotika Ktemata* (*SBWien* 357 [1979]) 35–36. Haldon especially notes George of Pisidia *Exp.Pers*. 2.175–176.

[12] *Cf.* Scipio Aemilianus at Numantia (App. *Hisp.* 6.14.85); Metellus in the Jugurthine War (Sall. *BJ* 44.1–5); Corbulo in Armenia (Tac. *Ann.* 13.35.1); Avidius Cassius against the Parthians (*HA Avid.* 4–6); Julian in Amm. Marc. 22.4.6–7. Tacitus, *Ann.* 11.18.2, comments on the possible exaggeration of such portraits. According to *HA Hadr.* 10.2, Hadrian consciously adopted Scipio and Metellus as models in this respect. Note also the "crisis" in discipline and military effectiveness blatantly manufactured by Fronto *Princ.Hist.* 13, in order to magnify the dubious achievements of Lucius Verus' campaign against the Parthians.

meaning and significance based on subsequent events. Above all, it is important to appreciate that the months of winter and especially early spring were traditionally the occasion for large-scale training, army manoeuvres, and cavalry "games," at least in the late Roman and Byzantine periods.[13] Before commencing a campaign commanders would regularly face the problem of integrating new recruits into existing, probably under-strength units.[14] Such large-scale training exercises, therefore, doubtless also preceded the subsequent campaigns of Heraclius, not just that of 622.

George's reasons for describing these manoeuvres in detail at this juncture, but preceding no other campaign, relate not to their historical uniqueness or importance, but rather to his pane-gyrical purpose and the difficulties of his material. George's style easily convinces the reader that events of great military significance are being described, especially, as noted above, the modern reader with a knowledge of subsequent events. In reality the campaign of 622 achieved at best very limited strategic success through manoeuvring and minor skirmishes; Heraclius left the field army in mid-campaign, which was cut short by diplomatic and military exigencies elsewhere.[15] In fact, in 623

[13] See Maur. *Strat.* 6.1.8–10 for a tradition of cavalry games in March. For similar March cavalry exercises that simulated combat in the first half of the seventh century see *Miracula S. Anastasii Persae* in B. Flusin, *Saint Anastase le Perse et l'histoire de la Palestine au début du VIIe siècle* I (Paris 1992) 135.3–6. *Cf.* Agathias *Hist.* 2.1.2 for Narses exercising his army in early spring of 554; Onasander *Strat.* 9.2 on training ἐν ταῖς χειμασίαις. In the early tenth century Leo, *Tact.* 7.2, comments on winter as a time for training.

[14] M. Whitby, "Recruitment in Roman Armies from Justinian to Heraclius," in A. Cameron, ed., *States, Resources and Armies* (Princeton 1995) 61–124, at 88; H. Elton, *Warfare in Roman Europe A.D. 350–425* (Oxford 1996) 228–229, 235. At various points in the sixth and early seventh centuries it was necessary to integrate units transferred from Asia Minor to the Balkans and vice versa.

[15] Oikonimidès (*supra* n.10); Howard-Johnston 3, 14–15. The limited success of this first, truncated campaign may explain its absence from other sources, such as Nicephorus' *Breviarium*, and why Sebeos *Hist.* 38 confuses the campaigns of 622 and 624. Its absence from the *Chronicon Paschale* is less surprising, given its relative lack of interest in these campaigns until the final victory is apparent.

the Romans appear to have only just managed to contain further Persian offensives by land and sea. George, because he could point to no substantial successes in the field, needed to pad out his narrative with details that at least portrayed the emperor actively engaged in improving the military position of the Empire. Subsequent campaigns provided him with much more suitable material, but in 622 George chose to develop as a dramatic battle narrative an engagement the Roman army fought against itself, an event he disingenuously endeavoured to present as a "victory," at least for the emperor's military genius. In making the most of any theme that appeared to restore Roman prestige, George's account has obscured the true nature of the events of early 622, and, it will be argued below, as a consequence of this distortion a traditional and regular feature of the training regime of the late Roman army appears in George's verse as a unique and novel event.

The contemporary use of simulated battles is confirmed by the slightly earlier military treatise, the *Strategicon* of the emperor Maurice, which gives no indication that such training was in any way a new, unusual, or remedial measure. It is important to clarify the character and purpose of this important text, which is to a great extent neglected and misunderstood.[16] The *Strategicon*, written in the 590s, is a comprehensive treatise of outstanding utility concerning all aspects of land warfare. Its author was able to combine, in deliberately simple Greek, earlier written material with a practical military knowledge. He also reveals an acute understanding of the realities of combat, and an insight into the psychological preoccupations of both generals and troops. Whatever doubts exist concerning its precise author (hereafter "Maurice"), the *Strategicon* was certainly sponsored by the central government, in effect an official ordinance rather than a personal reflection, the first such imperial literary

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[16] A new translation with full commentary and introductory studies is in preparation by the writer (Birmingham Byzantine and Ottoman Monographs).

initiative.[17] Like other *tactica* it is regularly branded "theoretical"; but on the whole the treatise presents a description, rather than a prescription, of the late-sixth-century Roman army and its practices.[18] Maurice's prefatory complaint concerning the poor state of contemporary "military discipline" is in large part a topos of the genre, but even if it is taken at face value Maurice seeks to rectify the problems of poorly-trained men and inexperienced officers not by reform or innovation but by codifying existing regulations and explaining the correct commands and procedures in an official elementary "handbook" for officers.[19] Where the author describes ideal or desiderated conditions, he expressly notes an awareness that the reality might be otherwise, and when he does prescribe reforms or refer to recent innovations, he clearly comments on the failures of past practices and sources of inspiration. The prescriptive element of the *Strategicon* is generally restricted to attempts to encourage

[17] The arguments for date and authorship are summarised by G. T. Dennis, *Das Strategicon des Maurikios* (CFHB 17 [Vienna 1981]) 15–18; P. Rance, *Tactics and Tactica in the Sixth Century: Tradition and Originality* (diss. St. Andrews 1994) 28–42. In addition, that the *Strategicon* is not dedicated to the reigning emperor, uniquely among Roman *tactica* (with the exception of Onasander's dedication to a consular), in itself implies imperial authorship, or at least imperial sponsorship. Vegetius (*Epit.* 1.8, 27) cites the *constitutiones* of Augustus, Trajan, and Hadrian, but for the character of these see A. A. Schiller, "Sententiae Hadriani de re militari," in W. G. Becker and L. S. von Carolsfeld, edd., *Sein und Werden im Recht: Festgabe für Ulrich von Lübtow* (Berlin 1970) 295–306, citing the extensive earlier bibliography. He argues convincingly for ad hoc, isolated, and largely legalistic rulings, rather than codification of military ordinances.

[18] See the general assessment of F. Aussaresses, *L'Armée byzantine à la fin du VIe siècle d'après le "Strategicon" de l'empereur Maurice* (Bibl.Univ.Midi 14 [Paris 1909]) 7: "On peut donc voir l'armée telle qu'elle était et non telle qu'il [Maurice] la voulait."

[19] *Strat. praef.*10–19; repeated 12.B.*praef.* The precise translation of the allegedly long-neglected ἡ στρατιωτικὴ κατάστασις is elusive; G. T. Dennis, *Maurice's Strategicon* (Philadelphia 1984) 8, has "the state of the armed forces" at *praef.* 10, while elsewhere translating the same phrase as "discipline" (8.1.18), "military obligations" (9.3.143), and "organization" (12.B.*praef.*6). For the topos of military neglect *cf.* Veget. *Epit.* 1.28, Syrianus *De re strategica* 15. Maurice's intended readership is τοῖς εἰς τὸ στρατηγεῖν ἐπιβαλλομένοις at *praef.*24, but more general at 11.4.226–227. Dennis (xv) describes the readership as "the average commanding officer."

correct cavalry deployment and tactics, especially in imitation
of contemporary Avar cavalry.[20]

Prima facie the *Strategicon* gives the appearance of being
largely unrelated to earlier works of the genre and of describing
a "new" military system, a characterisation which has been ac-
centuated by the frequent and unhelpful label "Byzantine." Con-
sequently its importance as a source for earlier military practice
is often overlooked for all but rather superficial analogies.[21] The
apparent novelty of much of the *Strategicon* is deceptive for two
reasons. First, although by the standards of the genre Maurice's
debt to earlier literary compositions is relatively slight, his delib-
erate choice of a colloquial idiom obscures many similarities
with earlier *tactica* written in a classicising style.[22] Second,
Maurice was certainly familiar with earlier treatises, which he
utilized not so much as "sources" as to assist him in broadly
conceptualising his subject, notably Onasander's *Strategicus*; but
he claims neither originality nor improvement on the military
knowledge of "the Ancients."[23] Accepting that authorial humil-
ity is a commonplace of the genre, the *Strategicon* is explicitly "a
modest elementary handbook or introduction" (μετρίαν τινὰ
στοιχείωσιν ἤτοι εἰσαγωγήν), which covers the most basic topics

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[20] For Maurice explicitly stating an ideal situation see, for example, the
archery skills of cavalry, 1.2.28–30; the availability of armour, 12.B.4;
16.31–32, 47–49, 54–55. For prescribed tactical change and its inspiration, see
the importance of deploying in more than one battle line, 2.1. Maurice here
refers expressly to the deployment of all-cavalry forces; his comment does not
mean that late Roman commanders did not appreciate the value of reserves.

[21] An important exception is M. P. Speidel, "Who Fought in the Front?" in G.
Alföldy, B. Dobson, W. Eck, edd., *Kaiser, Heer und Gesellschaft in der römi-
schen Kaiserzeit: Gedenkschrift für Eric Birley* (Stuttgart 2000) 473–482, who
uses the *Strategicon* to elucidate earlier evidence for Roman deployment.

[22] For Maurice's professed aim to eschew a literary style, *praef.*16–17, 27–
31; 12.B.*praef.*9–10.

[23] Maurice outlines his intention to compose a work drawing on ancient
sources and his own "modest experience": ἔκ τε τῶν ἀρχαίων λαβόντες καὶ
μετρίαν πεῖραν ἐπὶ τῶν ἔργων εὑρόντες (*praef.*14–19). For authorial humility
as a topos *cf.* Veget. *Epit.* 1.*praef.*1.8, who also claims no originality; *cf.* 1.5, 7;
2.3, 18; 3.10. *Cf.* generally in late antiquity Agath. *Hist. praef.*12–13; Menander
Prot. fr.1.2 Blockley; Theophyl. Sim. *Hist. praef.* 16.

and mundane technical minutiae. Much of its contents, including those relating to training and drill, seem "new" only because these subjects, as Maurice himself notes, were usually over-looked by more polished literary compositions, written for "a knowledgeable and experienced readership" (πρὸς εἰδότας τε καὶ ἐμπείρους).[24] Clearly compilatory in character, the *Strategicon* appears to have drawn upon official ordinances, regulations, and commands, possibly translated here from Latin into Greek for the first time.[25] Another possible source for this material were short, non-literary monographs or unofficial "pamphlets," informal compositions by definition unlikely to survive.[26] Maurice consequently preserves a great deal of traditional material, still current in his own time, and of value in elucidating earlier practices.

[24] *Praef.*17–27. It was, however, very much another topos of the genre to emphasise the elementary nature of a work relative to earlier "classics." In fact, Maurice's preface itself, in content and vocabulary, owes much to Aelian's *Tactica* (1.2, 6), in particular the notion that both texts are an εἰσαγωγή as opposed to more advanced technical monographs. For training and drill in the *Strategicon cf.* 1.1; 3.1–7; 6.1–5; 12.B.2–3, 14–17, 24.

[25] See, for example, *Strat.* 1.6–8. Although these chapters relate to crimes and punishments rather than military procedures, they nevertheless refer, both explicitly and implicitly, to the circulation of written documents at regimental level. Written orders and general ordinances addressed to officers: to merarchs and moirarchs 3.5.123, 3.11.4, 7.B.16.41; to tribunes 1.6.5, 7.A.4.6, 12.B.*praef.*7, 12.B.24.30, and assumed at 7.B.17.41.

[26] A possible example of this type of pamphlet is the anonymous *De militari scientia*, a bald series of excerpts from the *Strategicon*, apparently to serve as an officer's aide-mémoire. See K. K. Müller, "Ein griechisches Fragment über Kriegswesen," *Festschrift für Ludwig Urlichs* (Würzburg 1880) 106–138; R. Vári, "Das Müllerische Fragment über griechische Kriegswesen," *Εἰς μνήμην Σπ. Λάμπρου* (Athens 1935) 205–209; A. Dain, "Les statégistes byzantins," *TravMém* 2 (1967) 317–392, at 346. Examples of non–literary and to varying degrees didactic texts include the *opusculum* on hunting as military training, appended to the *Strategicon* (12.D), and also the short treatise on archery included as chapters 44–47 of the so–called *De re strategica* section of the *Compendium* of Syrianus Magister, ed. G. T. Dennis, *Three Byzantine Military Treatises* (Dumbarton Oaks 1985), with corrections and attribution by C. Zuckerman, "The *Compendium* of Syrianus Magister," *JÖByz* 40 (1990) 209–224. See O. Schissel von Fleschenberg, "Spätantike Anleitung zum Bo-genschiessen," *WS* 59 (1941) 110–124; 60 (1942) 43–70; G. Amatuccio, *Peri Toxeias. L'arco da guerra nel mondo bizantino e tardo antico* (Bologna 1996) 67–80. Such specialised monographs doubtless existed earlier, and in a more literary form, *cf.* Pliny the Elder's *De iaculatione equestri* mentioned by Pliny *Ep.* 3.5.

Throughout the *Strategicon* Maurice is concerned with provid-
ing recruits with experience as near to battlefield conditions as
possible. To this end he stipulates that Roman troops be de-
ployed to simulate enemy formations or to represent other units
in the Roman battle line. For example, in drilling an individual
cavalry *bandon*, he requires that a single file of men be arrayed
down the side of each of its flanks (ἐπὶ ἁπλῆς ἀκίας ἑκατέρω-
θεν αὐτοῦ) to simulate the neighbouring units in the battle line
(*Strat.* 3.5.87–99). These files effectively acted as a gauge for the
training and manoeuvring of the *bandon*, setting the parameters
for the length of its line and the area available for deploying and
regrouping. More advanced training in battle tactics employed
"a few cavalry, up to one or two *banda*, arrayed in a single line
opposite them as the enemy"(ὀλίγων καβαλλαρίων ἄχρι ἑνὸς ἢ
δευτέρου βάνδου ἐπὶ ἁπλῆς ἀκίας ἀντιτασσομένων αὐτοῖς ὡς
ἐναντίων, 3.5.114–119). This simulation of the enemy battle line
provided a target with which to practise outflanking and envel-
opment. Similarly, in the demanding cavalry exercises for with-
drawing, regrouping, and counter-attacking, two units charged
headlong at one another but "without coming to blows" (μὴ
ἐγκρούουσαι ἑαυταῖς, 6.3). In some cases the use of a handful
of men to simulate whole formations may have resulted from a
dearth of available troops during training sessions. Units might
be stationed at considerable distances, hindering larger-scale
operations, especially in winter when troops tended to be
widely dispersed for logistical reasons. Furthermore, at any
given time those on special duties or fatigue, the unfit, and
casualties would further reduce the numbers available for such
exercises.[27]

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[27] *E.g.* Theophyl. Sim. 7.7.1, for Priscus mustering his army in spring 595, to
find that few troops were available. See generally Davies, "The Training
Grounds of the Roman Cavalry," in *Service* (*supra* n.2) 93–124 (= *ArchJ* 125
[1968] 73–100), at 112–116; Goldsworthy 24–25. For a modern parallel *cf.*
British army training in the late nineteenth century, where a lack of available
troops forced small numbers of men with flags to simulate whole enemy forma-
tions: E. M. Spiers, *The Late Victorian Army* (Manchester 1992) 262.

In addition to these simulations, Maurice's most conspicuous departure from the theoretical element of tactical training is his requirement that large-scale mock battles be staged. In a chapter introducing the various manoeuvres (κινήσεις) necessary to train infantry, Maurice lists marching drill, changes of formation and depth, and "fighting simulated battles, sometimes with sticks, sometimes with naked swords" (συμβάλλειν σχηματικῶς ποτὲ μὲν μετὰ βεργίων, ποτὲ δὲ μετὰ γυμνῶν σπαθίων).[28] He later elaborates on these large-scale exercises:[29]

κατορθωθείσης ἰδίᾳ τῆς ἑκάστου τάγματος γυμνασίας κατὰ τὸν εἰρημένον τρόπον, δεῖ ἐνέγκαι τὸν στρατὸν ὅλον καὶ κατὰ πάντα ὁμοίως δημοσίῳ πολέμῳ τάξαι τὴν παράταξιν, τούς τε σκουτάτους καὶ ψιλοὺς καὶ καβαλλαρίους καὶ τὰς ἁμάξας καὶ τὸν λοιπὸν τοῦλδον, καὶ ἀντικαταστῆσαι αὐτῇ ὅτε μὲν πεζοὺς ἐπὶ ἁπλῆς ἀκίας ἀντιπαρατασσομένους αὐτῇ, ὅτε δὲ τοὺς καβαλλαρίους τοξεύοντας δίχα ξιφῶν. καὶ ποτὲ μὲν μετὰ τάξεως ἐρχομένους κατ᾿ αὐτῆς, ποτὲ δὲ μετὰ κονιορτοῦ καὶ κραυγῆς καὶ ἀταξίας, ὅτε ὄπιθεν, ὅτε ἐκ τῶν πλαγίων καὶ κατὰ νώτου, ἵνα οἱ πεζοὶ καὶ οἱ καβαλλάριοι πάντων ἐν ἔθει γινόμενοι μὴ ταράσσωνται καὶ οἱ μεράρχαι ἁρμόζωνται ταῖς κατ᾿ αὐτῶν ἐγχειρήσεσιν. ὁμοίως τε καὶ τοὺς καβαλλαρίους δοκιμάζεσθαι ποτὲ εἰς τὰ ἄκρα ἑστῶτας, ποτὲ εἰς τὸν νῶτον ἐρχομένους τῶν πεζῶν καὶ μεταβαλλομένους κατὰ νώτου.

After the individual training of each *tagma* has been successfully accomplished in the aforesaid manner, it is necessary to draw up the whole army and array it in the battle line in every way as though for a pitched battle, including the heavy infantry and light infantry, cavalry, the wagons, and the rest of the baggage train. Opposite there must be sometimes infantry arrayed in a single line against them, sometimes cavalry firing arrows without points. They must sometimes move with good

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[28] *Strat.* 12.B.14.9–10; *cf.* Leo *Tact.* 7.3.

[29] 12.B.17.1–13. Book 12, devoted to infantry formations, is sometimes described as an afterthought, appended later to the main text: see Dennis (*supra* n.19) xviii; Dain (*supra* n.26) 342. Although parts of Book 12 show signs of an earlier existence, the book is thoroughly revised, written in a common idiom, and fully incorporated into the main text. There is a cross–reference to Book 12 as early as 2.2.7–8. See Rance (*supra* n.17) 86–89.

order against our battle line, sometimes with dust and shouting and disorder; sometimes from behind, or from the flanks and against the rear, so that the infantry and cavalry might become accustomed to every eventuality and not thrown into confusion. The merarchs must also adapt to attacks against them. Similarly, the cavalry must also be exercised, sometimes stationed on the flanks, sometimes moving to the rear of the infantry, and then wheeling about.

Such a battle, be it with staffs or real weapons, aimed to accustom the whole army, recruit and veteran alike, to battlefield conditions through a variety of attacks and manoeuvres, and to minimise the shocks and imponderables of real combat. It is interesting to note that Maurice includes even the merarchs, the divisional commanders, as beneficiaries. The *Strategicon* stresses throughout the need for officers of all ranks to understand their respective roles thoroughly, and several chapters recapitulate the commands, drills, and formations each should know.[30] Simulated battle would offer senior and junior officers experience in deploying and manoeuvring in combat, especially the effect that reduced visibility and noise would have on giving orders, receiving reports, and co-ordinating formations. Maurice's use of ἁρμόζονται here is thoroughly in accord with the general precepts of the *Strategicon*, in which ἁρμόζεσθαι frequently implies response and adaptation to diverse enemy tactics.[31]

The historicity of Heraclius' mock battles of early 622 as described by George of Pisidia, a well-connected contemporary and possible eyewitness, is doubted by no modern commentator. It is an unlikely fabrication; even if George had been able to present his audience with pure invention, there were certainly more effective ways of glorifying his hero than the manufacture of this technical and rather obscure practice. The official and panegyrical character of his composition, however,

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[30] 7.B.16–17; 12.B.24. See *supra* n.26 for *De militari scientia*, the aide-mémoire comprising commands excerpted from the *Strategicon.*

[31] See 11.*praef*.8–9 and the chapter headings of Book 11.

makes his account prone to exaggeration and distortion, and it is also probable that the poet and churchman did not fully understand the context and significance of what he described. The accounts of George and Theophanes conform closely to the regulations in Maurice's *Strategicon* of the 590s, in which techniques of battle simulation are applied generally throughout cavalry training, and which specifically enjoins simulated combat for the entire army as an essential element of preparation for battle.[32] There is no evidence, however, that George of Pisidia was aware of this technical material.[33] Similar springtime army manoeuvres and "games" are broadly attested in sixth- and early-seventh-century sources, and the appearance of mock battles in the *Strategicon*, a non-literary text different from George's panegyrics in genre, literary affinities, and purpose (though both in their own way "official" productions), points to these exercises being neither unusual nor the "innovation" that George asserts. In order to establish the nature and duration of this tradition, it is necessary to examine earlier evidence for simulated battles as a regular element of the training of the army. There follows a survey of the relevant sources, which first examines the evidence of *tactica*, the wide genre of military

[32] Theophanes 303.12–17 notes the noise and confusion, κραυγήν τε πολεμικὴν καὶ παιᾶνας καὶ ἀλαλαγμόν, of the simulated battle, which Maurice lists as a desideratum for realism, ποτὲ δὲ μετὰ κονιορτοῦ καὶ κραυγῆς καὶ ἀταξίας, *Strat.* 12.B.17.9–10. In *Strat.* Book 6 on cavalry drill: Theophanes 303.13 ἐξεπαίδευσεν *cf. Strat.* 6.1.9 ἔπαιζον, and *cf.* Theoph. 303.17 ὡς εἰς παίγνιον; Theoph. 303.16 μὴ ξενίζωνται, *cf. Strat.* 6.*praef.*14 μὴ ξένον ποιοῦνται.

[33] Pertusi (*supra* n.1) 152 notes at *Exp.Pers.* 2.136 ἔσφιγξαν αὐτῶν ἀσφαλῶς τὰ τάγματα, George's use of the "verbo tecnico militare" ἔσφιγξαν, the verb "to close ranks" used frequently in the drill sections of the *Strategicon*. The poet's use of the term actually demonstrates his limited understanding of technical vocabulary. In the correct technical usage, as throughout the *Strategicon* and Leo's *Tactica*, σφίγγω is always intransitive. It would anyway certainly not take τὰ τάγματα as its object; the latter means "formations," "units," or "regiments," never "ranks" or "files." It is perhaps worth noting that Theophanes 304.6 rendered George's ἔσφιγξαν αὐτῶν ἀσφαλῶς τὰ τάγματα with ἀσφαλῶς συνέστησαν τὰ τάγματα. Though by no means conclusive, Theophanes appears to have understood George to mean simply regiments closely arrayed together.

handbooks, and then assesses the references in narrative histories and poetic allusions.

The evidence of *tactica*

It is well known that part of the Roman soldier's basic training required combat with a real opponent, and Maurice confirms the continuance of this tradition.[34] That training generally could be hazardous is indicated by specific legal provisions for cases of men wounded or killed on the *campus*.[35] For present purposes it is necessary to distinguish between such one-to-one weapons training and large-scale mock battles, which tested not only dexterity in varied weaponry, but also improved cohesion within and between units in a battle line, offered a psychological introduction to combat, and tested officers' skills of command and co-ordination. It is difficult to envisage how the individual soldier would otherwise appreciate his position and role within the wider scheme of battle, and understand the spacing, distances, and timing of formations and manoeuvres.

With a few significant exceptions, large-scale simulated combat of the type described in the *Strategicon* is not discussed in earlier military treatises. This dearth results in large measure from the nature of the earlier genre, which was dominated by specialised *poliorcetica* and antiquarian treatments of the classical-hellenistic phalanx. The principal exception is the *Strategicus* of Onasander, in which mock battle is recommended as a regular element of training in peacetime. Onasander's *Strategicus*, written in the 50s A.D., is more a philosophical and ethical treatise for the gentleman who aspired to generalship than a technical handbook, but it is easy to underestimate its

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[34] For fencing with a real opponent see Antyllus (II A.D.) *apud* Oribas. *Coll. med.* 6.36; Fronto *Princ.Hist.* 10. For comment on the latter see Davies, "Fronto" (*supra* n.3). *Cf. Strat.* 12.B.2.2, εἰς μονομαχίαν μετὰ σκουταρίων καὶ βεργίων ἀντὶς ἀλλήλλων.

[35] *E.g.* Just. *Instit.* 4.3.4. *Cf. Strat.* 3.5.109 for "collision" of horses. For a trooper hurt in such a collision see *Mirac. S. Anastasii Persae* (*supra* n.13) 135.

utility. A difficult feature of the work is the author's professed intention to discuss the principles of specifically Roman warfare (*praef.*7–8), while actually presenting a series of generalities and commonplaces applicable to most armies of diverse periods. Furthermore, in presenting these precepts of "Roman" warfare, Onasander drew upon earlier Greek military authors, especially Xenophon, to an extent that appears to undermine the contemporary value and *Romanitas* of his treatise.[36] Onasander's borrowings, however, tend to be non-technical, often psychological insights, and on the whole indicate an interest in the literary style and broad subject matter of his sources rather than specific content. Recent studies have stressed the subtle cultural and ideological subtext of the *Strategicus* within a broader cultural dialogue that sought to accommodate Greek culture within the early Empire. Onasander certainly intended his treatise to be a practical handbook, but one that implicitly stressed the contribution of Greek precedents to Roman military success.[37] Contemporary relevance was therefore essential to the author's purpose. Despite the occasional use of fourth-century B.C. stylistic models, there is nothing in the *Strategicus* that is overtly anachronistic or inappropriate to first-century Roman warfare; indeed there are some passages that suggest conscious updating to contemporary Roman practice.[38]

These considerations should be borne in mind in assessing

[36] For Onasander's sources see W. Peters, *Untersuchungen zu Onasander* (Bonn 1972); D. Ambaglio, "Il Trattato 'Sul Comandante' di Onasandro," *Athenaeum* 59 (1981) 353–377, esp. 357–365.

[37] Ambaglio (*supra* n.36) 375–377; C. J. Smith, "Onasander On How to be a General," in M. Austin, J. D. Harries, C. J. Smith, edd., *Modus Operandi: Essays in Honour of Geoffrey Rickman* (London 1998) 151–166.

[38] *Strategicus* 6 appears aware of the Roman *agmen quadratum*; while 21, it has been suggested, is reminiscent of legionary manipular tactics. Onasander also clearly describes the Roman *testudo* at 20, even if he does not explicitly name it. See the comments and reservations of W. A. Oldfather, *Aeneas Tacticus, Asclepiodotus, Onasander* (Loeb 1923) 349–351; Ambaglio (*supra* n.36) 367–368.

Onasander's outline of how the ideal general should train his forces (10.4–6):

εἶτα διελὼν τὰ στρατεύματα πρὸς ἀλλήλους ἀσιδήρῳ μάχῃ συναγέτω νάρθηκας ἢ στύρακας ἀκοντίων ἀναδιδούς, εἰ δέ τινα καὶ βεβωλασμένα πεδία εἴη, βώλους τε κελεύων αἴροντας βάλλειν· ὄντων δὲ καὶ ἱμάντων ταυρείων χρήσθων ἐπὶ τὴν μάχην· δείξας δ' αὐτοῖς καὶ λόφους ἢ βουνοὺς ἢ ὀρθίους τόπους κελευέτω σὺν δρόμῳ καταλαμβάνεσθαι· ποτὲ δὲ καὶ ἐπιστήσας ἐπὶ αὐτῶν τινας τῶν στρατιωτῶν καὶ ἀναδοὺς ἃ μικρῷ πρόσθεν ἔφην ὅπλα, τούτους ἐκβαλοῦντας ἑτέρους ἐκπεμπέτω … παραπλησίως δὲ γυμναζέτω καὶ τὸ ἱππικὸν ἁμίλλας ποιούμενος καὶ διώγματα καὶ συμπλοκὰς καὶ ἀκροβολισμούς.

Next, dividing the army, let him lead them against one another in a sham battle, handing out staves or spear shafts, and if the plain be covered in clods, ordering them to pick up clods to throw. And any leather straps to hand should be used in the battle. Pointing out to the soldiers ridges or hills or steep ascents, he should command them to charge and seize these places; and sometimes arming soldiers with the weapons I have just mentioned, he should place some on the hilltops and send others to dislodge them … Similarly, let him also train the cavalry, arranging contests[39] and pursuits and mêlées and skirmishes.

What Onasander proposes here are large-scale war games for Roman infantry and cavalry over a variety of terrains. In doing so, however, he drew heavily upon his most important stylistic model, Xenophon.[40] In his historical novel, the *Cyropaedia*, Xenophon has an extended description of a mock battle organised by Cyrus to train the Persian army (2.3.17–20). In this Cyrus apparently applied to his whole army a technique pioneered by one of his taxiarchs, whom he "saw drawing up one half of the men of his unit against the other half for an attack" (ἰδὼν αὐτὸν τοὺς μὲν ἡμίσεις τῶν ἀνδρῶν τῆς τάξεως ἀντιτάξαντα

[39] Oldfather (413) translates ἁμίλλας here as "practice battles," but this is too specific; in equestrian contexts the word usually implies simply races.

[40] For Onasander's stylistic debt to Xenophon see Oldfather 351; Ambaglio (*supra* n.36) 358–361; Peters (*supra* n.36) 72–73, 154–157, discusses Xenophon's influence upon Onasander both generally and in this passage.

ἑκατέρωθεν εἰς ἐμβολήν). In this combat one side was armed with staves (νάρθηκας), the other with clods (ταῖς βώλοις), and then the roles were reversed. This spectacle so impressed Cyrus, especially because "at the same time they were being trained and enjoyed themselves" (ἄμα μὲν ἐγυμνάζοντο, ἄμα δὲ ηὐθυ-μοῦντο), that the following day the whole plain was full of men "indulging in this sport" (ταύτῃ τῇ παιδιᾷ ἐχρῶντο). The specific event is fictional, though it would be interesting to know Xenophon's source of inspiration. This description comes within a longer section on training and drill in which Xenophon draws upon his own extensive military experience. Cyrus' mock battle seems to be a more practical, and certainly more physically arduous, version of the traditional mimic battles and war-dances mentioned elsewhere by Xenophon, which were used to teach the basic movements of attack and defence.[41]

Onasander's stylistic debt to Xenophon's *Cyropaedia* in this instance by no means renders his description of mock combat an antiquarian irrelevance. As already noted, anachronism did not suit Onasander's purpose. Combat with staves or blunt spear shafts was a standard element in the Roman and Byzantine soldier's basic training, and references in narrative histories, discussed below, attest organised mock combat throughout the later Republic and Principate. In fact only νάρθηκας comes from Xenophon, and Onasander's νάρθηκας ἢ στύρακας ἀκοντίων are perfectly comprehensible as *rudes* and *hastae praepilatae*, the standard practice weapons of Roman military training.[42] Furthermore, Onasander's very specific insertion of ὄντων δὲ καὶ ἱμάντων ταυρείων appears to refer to the "leather straps" that were a standard item of legionary equipment, used in handling turfs during rampart construction. This, otherwise decidedly

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[41] Xen. *An.* 6.1.1–13; *cf. Hell.* 4.4.17; Ath. 4.631A. For comment see J. K. Anderson, *Military Theory and Practice in the Age of Xenophon* (Berkeley/Los Angeles 1970) 92–93, and more extensively E. L. Wheeler, "*Hoplomachia* and Greek Dances in Arms," *GRBS* 23 (1982) 223–233.

[42] The equation is also made by Horsmann 142.

odd, addition may therefore be taken as Onasander updating his source in accordance with current circumstances.[43] Even the most cautious view of the contemporary historicity of this passage must accept that here Onasander at least describes the sort of war games that he thought corresponded to first-century Roman practice, and for which he could evince a suitable Greek literary precedent.

Onasander's passage is especially significant because in turn it influenced Maurice's own description of large-scale simulated battles. There can be no doubt that in compiling the *Strategicon* Maurice was familiar with Onasander's work, though the precise relationship between the two texts was a subtle one.[44] Maurice's use of Onasander was in no sense derivative; essential continuities in many aspects of ancient warfare often permitted an author to reuse much earlier texts without damage to the contemporary value of his treatise. It is important to appreciate that even the most experienced professional soldier's knowledge of warfare does not necessarily qualify him as a capable author on the subject. The most up-to-date and practical handbook benefits from and is inspired by its antecedents, and Onasander's *Strategicus* served more as a literary and conceptual model for Maurice in the composition of his own work than as a "source" of technical information. To a large extent this was due to the very general and wide-ranging nature of Onasander's work, which corresponded to Maurice's expressed agenda far more than the limited interests of many

[43] These ἱμάντες are noted by Josephus, *BJ* 3.95. See G. Webster, *The Roman Imperial Army*[3] (London 1985) 130.

[44] The influence of Onasander's *Strategicus* as a literary model for the *Strategicon* was noted briefly by Oldfather (352); H. Hunger, *Die hochsprachliche profaner Literatur der Byzantiner* (Munich 1978) II 329–330. For a more detailed study, but one which exaggerates the connection, see V. Kučma, "'Strategikos' Onasandra i 'Strategicon Maurikija': Opyt sravnitel'noj charakteristiski," *VizVrem* 43 (1982) 35–53; 45 (1984) 20–34; 46 (1986) 109–123. See also Rance (*supra* n.17) 96–102.

other works of the tactical genre.[45] The two descriptions of simulated combat are therefore conceptually parallel without specific verbal similarities, which are hardly to be expected between Onasander's Atticising idiom and Maurice's unadorned vernacular.[46] Since the *Strategicon* is devoid of Onasander's stylistic, historical, or ideological concerns, Maurice's reprisal of this passage indicates his consideration of the contemporary relevance of this exercise. It is interesting to note that when the emperor Leo VI compiled his *Tactica* in the early tenth century, his treatment of training reveals a debt to both Onasander and Maurice. Throughout his book on training (*Tact.* 7, Περὶ γυμνασίας καβαλλαρικῆς καὶ πεζικῆς) Leo drew extensively on Maurice (especially *Strat.* 12.B.11–16), stopping just before Maurice's treatment of the mock battle (12.B.17). At this point (*Tact.* 7.9–18) Leo turned instead directly to Maurice's own "source" and thereafter followed Onasander (10.1–4), whose text he clearly preferred. Leo's description of mock battle is thus an almost verbatim rendering of Onasander's (*Tact.* 7.13 = Onasander 10.4).[47] The relationship between Xenophon, Onasander, and Maurice, three very different authors of diverse periods, demonstrates the importance and scope of literary mimesis in the context of a continuous historical tradition. In composing his treatise in the late sixth century Maurice was influenced by a reference in his first-century conceptual model, which itself derived from a stylistic model of the fourth century B.C., a clear illustration of the importance of antecedents and

[45] In the sixth century John Lydus included Onasander in his list of recommended military authorities (*Mag.* 1.47); in the early tenth century Leo listed Onasander as one of the works he consulted in compiling his own text (*Tact.* 14.112). On the subsequent popularity and influence of Onasander see Oldfather 350–352; C. G. Lowe, *A Byzantine Paraphrase of Onasander* (St Louis 1927); A. Dain, *Les manuscrits d'Onésandros* (Paris 1930).

[46] *Strat. praef.*16–17, 27–28; 12.B.*praef.*9–10. A few recognisable verbal parallels, however, do exist between Maurice and Onasander, see Rance (*supra* n.17) 100–101.

[47] The relevant passages are juxtaposed in the different registers of R. Vári's edition, *Leonis Imperatoris Tactica* I (Budapest 1917) 145–146.

models in the conception and composition of military hand-books, and of technical literature in general.

Aside from Onasander's *Strategicus*, explicit references to simulated battles in earlier *tactica* are elusive. The principal extant source for the content of Roman military training is Vegetius' *Epitoma rei militaris* (1.8–28, 2.23, 3.9). This probably late-fourth-century treatise is very problematic, however, being essentially a reforming programme based on selected earlier practices culled from republican and earlier imperial sources, probably known imperfectly through later epitomes. These Vegetius further elaborated with his own historical speculations and etymological deductions, and to some extent modified in accordance with later developments and contemporary vocabulary. Much of the *Epitoma*, therefore, is not a description of the army as it was in Vegetius' day, but rather a prescription for the army as wished for, and this from an essentially civilian and amateur, albeit well-informed perspective. Given Vegetius' detailed treatment of the correct military training regime, and his manifest interest in Roman military antiquities, his treatise is precisely the text in which an earlier tradition of simulated combat might be expected. Vegetius does not refer at length to such large-scale mock battles, but the value of the *Epitoma* is limited to those topics Vegetius chose to include. He expressly omitted sections of the army he believed functioned effectively, and routinely overlooked subjects with which his reader might already be familiar. Above all, a discernible problem is the absence of any detailed treatment of tactical training and field manoeuvres, which in large part stems from Vegetius' particular concern for the basic and weapons training of recruits, upon which, he believed, Roman military success was originally based and through which he proposed to restore contemporary Roman fortunes. This, essentially polemical, imbalance results in the

near complete neglect of all aspects of training and drill above the level of the professional skills of the individual soldier.[48]

Nevertheless, it is possible to identify brief references to mock combat and similar field manoeuvres scattered throughout the *Epitoma*, their disparate arrangement reflecting the author's relative lack of interest. In particular, Vegetius describes contests between different groups of soldiers, recommending that they "occupy some point and, with shields opposed to one another, strive not to be dislodged by their comrades" (*occupare aliquem locum et, ne a contubernalibus detrudantur, scutis inuicem obuiantibus niti*, 3.4). This exercise is reminiscent of Onasander's *Strategicus* (10.4), though the precise nature of the connection between the two texts, if any, remains elusive.[49] Vegetius also concisely explains that both infantry and cavalry should be regularly "led out on route marches" (*educantur ambulatum*, 1.27), a rare mention of field manoeuvres. Typically, for Vegetius the *ambulatura* was the final element in a recruit's training, effectively a summation and practical application in open country of all that he had previously learned; in fact the exercise also served as regular practice for more experienced troops.[50] According to Vegetius, *ambulatura* was a thrice-monthly twenty-mile route march for both infantry and cavalry in full kit, apparently in accordance with both ancient custom (*vetus consuetudo*) and as laid down by the *constitutiones* of Augustus and Hadrian.[51] The *ambulatura* appears to have been

[48] *Cf. Epit.* 1.26–27 for rare exceptions.

[49] It is very unlikely that Vegetius used Onasander directly. It is possible that the *Strategicus* was a source for the lost *De re militari* of Frontinus, which in turn Vegetius may have used, at least in Books 3 and 4, possibly in an epitome or at second hand, or at even greater remove. The textual parallels are listed by D. Schenk, *Flavius Vegetius Renatus: Die Quellen der Epitoma rei militaris* (*Klio* Beih. 22 [Leipzig 1930]) 81–83; and elaborated by N. Milner, *Vegetius: Epitome of Military Science*2 (Liverpool 1996) xxi–xxiii.

[50] For *ambulatura* or *ambulatio* see Davies (*supra* n.27) 112–116; Horsmann 175–176.

[51] Vegetius, *Epit.* 1.9, explains that the *militaris gradus* and *plenus gradus* respectively covered twenty and twenty-four miles in five hours. For twenty-mile marches *cf.* Suet. *Galba* 6.3; *HA Hadr.* 10.4.

much more than a marching exercise, however; Vegetius remarks that "both forces" (*utraque acies*) practised deploying, manoeuvring, and maintaining formation over different types of terrain (*non solum autem in campis, sed etiam in clivosis et arduis locis*). The sense of *utraque acies* is rather opaque; some translators have understood here two battle lines, and thus effectively a mock battle, though a vaguer reference to the aforementioned infantry and cavalry forces better suits the sense of the passage.[52] Less ambiguous is Vegetius' comment that the cavalry, "divided by troops and armed, similarly journeyed the same distance, so that they might perform equestrian manoeuvres, now pursuing, now withdrawing, and wheeling about to renew the charge" (*equites quoque divisi per turmas armatique similiter tantum itineris peragebant, ita ut ad equestrem meditationem interdum sequantur interdum cedant et recursu quodam impetus reparent*, 1.27). He does not elaborate, since he is professedly uninterested in cavalry, this branch of the contemporary army, in his opinion, being effective and not in need of reform (1.20, 3.26). Vegetius' brief account of *ambulatura* is again reminiscent of Onasander's large-scale manoeuvres for both infantry and cavalry in various types of terrain (10.4–6). Furthermore, Vegetius' *meditationes equestres* broadly recall Maurice's detailed treatment of contemporary cavalry drill (*Strat.* 3.5, 6.1–3). From this short notice, it is possible to identify *ambulatura* as a context for tactical deployment and manoeuvres which in some measure simulated battlefield conditions. Indeed, the more general military term *decursiones*, comparable to "manoeuvres" in modern mili-

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[52] Horsmann 175–176 comments on the ambiguity. For *utraque acies* as two battle lines see G. R. Watson, *The Roman Soldier* (London 1969) 72 ("the two battle lines"); F. L. Müller, *Vegetius: Abriss des Militärwesens* (Stuttgart 2001) 63 ("beiden Schlachtformationen"). For *utraque acies* as a reference to the infantry and cavalry see L. F. Stelton, *Flavius Vegetius Renatus: Epitoma Rei Militaris* (New York 1990) 152 ("both groups"); Milner (*supra* n.49) 26 ("both formations"); C. Guiffrida, *Flavio Vegezio Renato, Compendio delle Istituzioni militari* (Testi e Studi de Storia Ant. 5 [Catania 1997]) 152 ("le armate").

tary parlance, similarly encompasses suitable circumstances for mock combat, though the existing evidence is often ambiguous.[53]

Vegetius later clarifies a general's duties immediately prior to leading his troops into combat. His outline of mobilising and preparing an army at the opening of a campaign reveals an awareness of the problems of integrating recruits into existing formations, and moreover that even veterans quickly become unaccustomed to battle if not regularly trained. His account broadly corresponds to Heraclius' preparations in 622, but more specifically to the *Strategicon*'s regime for tactical training, which similarly commences at the level of individual regiments and proceeds ultimately to exercises for the whole battle line (*Epit.* 3.9):

> *sed cum legiones auxilia uel equites ex diuersis aduenerint locis, dux optimus et separatim singulos numeros per tribunos electos, quorum scitur industria, ad omnia genera exercere debet armorum et post in unum collectos quasi depugnaturos conflictu publico exercebit ipse saepius temptabitque, quid artis possint habere, quid uirium, quemadmodum sibi ipsi consentiant, utrum ad tubarum monita, ad signorum indicia, ad praecepta uel nutum suum diligenter obtemperent.*

> Indeed, when legions, auxilia, and cavalry arrive from different stations, the best general should have single units trained separately in all types of arms by picked tribunes of known diligence, and afterwards, forming them into one place as if to fight a pitched battle, he will frequently train them himself, and test them to see what their potential skill and courage may be, how they interact with one another and whether they obey promptly the warnings of trumpets, directions of signals, and his own orders or command.

[53] See *e.g.* Livy 23.35 on T. Sempronius Gracchus, *crebro decurrere milites cogebat ut tirones … adsuescerent signa sequi et in acie agnoscere ordines suos.* For the equation of *ambulatura* and *decursio* see A. Neumann, "Römische Rekrutenausbildung in Lichte der Disziplin," *CP* 43 (1948) 157–173, esp. 157 n.3. For a historical survey of *decursiones* see Horsmann 176–186, who includes a very wide range of military exercises under this title, though not always convincingly. The various technical and general usages of *decursio* and its cognates require further clarification.

This is to continue until "they become fully expert in field man-oeuvres, archery, throwing javelins, and forming in battle line" (*uero in campicursione, in sagittando, in iaculando, in ordinanda acie ad plenum fuerint eruditi*).[54] Vegetius gives these important group exercises only passing attention, again in large part owing to his own concern for developing the individual skills of the recruit in accordance with a traditional training regime.

Vegetius does, however, frequently commend a type of advanced group training called *armatura*, which is of relevance to the present study. As a term describing a distinctive form of training *armatura* appears only in later Roman sources.[55] For Vegetius the *armatura* was the essence of the traditional training regime, and unsurprisingly he bemoans the fact that by his day this exercise (*prolusio*), formerly a universal requirement throughout the army, was restricted to circus displays on festive occasions performed by specialists called *armaturae*, by which he appears to mean the contemporary *scholae armaturarum*.[56] These have no direct association with the *armaturae* he mentions elsewhere in the *Epitoma* in connection with this type of training, who during the Principate were the expert weapons masters who taught the *armatura*.[57]

As a source for the nature and content of the *armatura* Vegetius' *Epitoma* poses a number of problems. Vegetius himself

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[54] *Cf.* 2.22, where Vegetius indicates that the various signals, both to individual soldiers and to units, were well rehearsed in peacetime. *Cf.* 1.1 for his general comments on the importance of camp operations and exercises to military success, *quaecumque euenire in acie atque proeliis possunt, omnia in campestri meditatione praenoscere.*

[55] *Armatura* as military exercise: Amm. Marc. 14.11.21; 15.4.10, 5.6, 6.33; 27.2.6; Veget. *Epit.* 1.4, 13; 2.14, 23; 3.4; Firm. Mat. *Math.* 8.6.3; Procl. *In Ptol. Tetrab.* 4.4.(180); John Lydus *De mag.* 1.46.

[56] 1.13, *cf.* 2.23 *armaturam, quae festis diebus exhibetur in circo, non tantum armaturae, qui sub campidoctore sunt, sed omnes aequaliter contubernales cotidiana meditatione discebant.*

[57] Their precise functions and background are elusive. Vegetius is the only literary source, and he is of limited value and probably anachronistic. See Horsmann 92–102; G. Alföldy, "Epigraphica Hispanica XII: eine neue Inschrift aus Tarraco: Dispensator Census Sarmatici oder Discens Armaturae?" *ZPE* 87 (1991) 163–167.

offers the only explicit details of this practice, though he in turn has extracted his information from more ancient, and almost certainly epitomised, sources. Furthermore, he characteristically introduces the *armatura* within his treatment of weapons training (1.13, *Armaturam docendos tirones*), between fencing techniques and exercises in throwing projectiles. Again, Vegetius' polemical interests lead him to discuss only those aspects of the *armatura* relating to the basic training of the recruit; he omits whatever other functions it might have fulfilled, perhaps assuming that his readership was familiar with the exercise, but creating a distorted impression of its nature.[58] In only one passage does he elaborate on the importance of the *armatura* (2.23):

> *nam et uelocitas usu ipso adquiritur corporis et scientia feriendi hostem seque protegendi, praesertim si gladiis comminus dimicetur; illud uero maius est, quod seruare ordines discunt et uexillum suum in tantis permixtionibus in ipsa prolusione comitantur nec inter doctos aliquis error existit, cum multitudinis sit tanta confusio.*

> For both speed is acquired through bodily exercise itself, and the skill to strike the enemy whilst covering oneself, especially in close-quarters sword fighting. Indeed, what is more, they learn how to keep ranks and to follow their ensign through such complicated evolutions in the exercise itself. No deviation arises among trained men, however great the confusion of numbers.

The *armatura* was apparently a series of exercises and drills in which units engaged in controlled close-quarters combat combined with tactical drill and manoeuvres. It aimed to improve weapons skills, especially swordsmanship and missile handling, and to impart tactical discipline and cohesion.[59]

[58] *Cf.* similar context of *armatura* at 2.14, 3.4. Vegetius' arrangement of his material is chiefly responsible for the mistaken belief that the *armatura* was a weapons exercise alone, and in particular a test of swordsmanship. See, for example, Watson (*supra* n.52) 61, who suggested that *armatura* involved the assignment to each recruit of a fencing opponent from among his comrades. Davies, "Daily Life" (*supra* n.3) 310, calls *armatura* "arms drill."

[59] Horsmann 146–148, citing older bibliography. Seemingly independently, in his translation of Vegetius' *Epitoma*, Milner (*supra* n.49: 12, 57) believed *armatura* to be analogous to "the mock–battle."

The origins of the *armatura* are obscure, in large part because the term appears only in late sources. The *armaturae* who taught the *armatura* during the Principate are attested epigraphically from the Flavian period, though very probably originated in the Augustan army reforms by which military training became more standardised.[60] However, exercises of this type certainly predate the specific term *armatura*, which appears to correspond broadly to earlier republican practices to be discussed below. It is the scale of these exercises that is most problematic. That Vegetius places overall responsibility for the *armatura* with the *campidoctor* perhaps suggests relatively small-scale exercises within the confines of the *campus*.[61] Furthermore, the broad parallels in all periods between the *armatura* and the *pyrrhica militaris* and *ludi castrenses*, discussed below, suggest the manoeuvres of smaller tactical units, probably in connection with manipular or cohortal tactics. The obsolescence of the *armatura* by Vegetius' day probably relates to long-term tactical changes in the third and fourth centuries in which the articulated legion, divided into tactical sub-units, gave way to less flexible and deeper phalangal formations in which individual expertise in weaponry was less important than unit cohesion and stamina, though the precise stages in this process are obscure.[62] It was thus the tactical redundancy of *armatura* that caused its relegation to a tournament practised only by specialists, rather than the reprehensible neglect that Vegetius would have his readers believe.

[60] Horsmann 101–102.

[61] The *campidoctor* seems to have had overall direction of instruction and instructors within the *campus*. For his duties during the Principate see Horsmann 90–92. The rank still existed in the later sixth century: Maurice *Strat.* 12.B.7.4; 8.20; 11.6, 15, 18, 20; 16.4; 17.53.

[62] For these tactical developments see E. L. Wheeler, "The Legion as Phalanx," *Chiron* 9 (1979) 303–318, esp. 314–318; M. J. Nicasie, *Twilight of Empire: The Roman Army from the Reign of Diocletian until the Battle of Adrianople* (Amsterdam 1998) 207–214; J. Haldon, *Warfare, State and Society in the Byzantine World* (London 1999) 192–193, 205–208.

If Vegetius' complaint concerning the restricted *armatura* of his own day does apply to the *scholae armaturarum*, as it appears to, then he probably refers to *armatura equestris*. Such displays clearly equate to the *imago pugnae* and *iucunda Martis* that Claudian (*VI Cons.Hon.* 621–639) describes taking place in the Circus, and the other, late sources for *armatura* characterise it as a display of expertise, or even an armed dance, rather than an element of regular training.[63] Although he never explicitly uses the term, the complex *hippika gymnasia* described by Arrian in his *Ars Tactica* (33–44), written *ca* 136, are almost certainly the *armatura equestris*.[64] Vegetius (*Epit.* 3.26) commends the skill at *armatura* of the imperial dedicatee of his *Epitoma*, most probably Theodosius I. Similarly, Ammianus notes the martial abilities of Constantius II, especially in the *armatura pedestris*.[65] It is probable that *armatura*, while a practical exercise in weapons skills and tactical manoeuvring, always possessed a distinctly more ceremonial or ludic character than the war games and combined exercises described by Onasander and Maurice, and even mentioned elsewhere by Vegetius. Nevertheless, Vegetius' proposal to resurrect *armatura* as a universal element of army training is more than naïve antiquarianism but rather highlights the fact that in all periods the distinction between games, spectacles, and training was often a fine one. The equestrian drills described by Arrian have been criticised as sportive exercises rather than serious training, but on the contrary the techniques

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[63] Firmicus Maternus, writing in the fourth century, says *aut qui saltu quadrigas transeat aut … adprime equo vectus militares armaturas exerceat* (*Math.* 8.6.3). *Cf.* Procl. *In Ptol. Tetrab.* 4.4.(180), where the word ὁπλοχρηστάς is explained οἷοίπερ εἰσιν οἱ μεθ' ὅπλων ὀρχούμενοι, οὓς καλοῦσιν ἀρματούρας.

[64] For the date see E. L. Wheeler, "The Occasion of Arrian's *Tactica*," *GRBS* 19 (1978) 351–365. For commentary see F. Kiechle, "Die 'Taktik' des Flavius Arrianus," *BerRGK* 45 (1964) 87–129; M. Junkelmann, *Die Reiter Roms* II *Der militärischer Einsatz* (Mainz 1991) 175–182; A. Hyland, *Training the Roman Cavalry: from Arrian's Ars Tactica* (Dover 1993).

[65] Amm. Marc. 21.16.7. *Cf.* similar comments regarding Gallus Caesar at 14.11.3 and Julian at 16.5.10. At 23.6.86 Ammianus appears to use *armatura* generally for military training.

exhibited are the very essentials of military training.[66] In *armatura equestris* horsemanship, marksmanship, and co-ordination were aspired to and demonstrated at the highest level, indeed ὡς πρὸς ἀλήθειαν τῶν πολεμικῶν ἔργων ἠσκημένην (Arr. *Tact.* 42.5), reinforcing morale, professionalism, and unit identity.[67] Furthermore, Hadrian officially recognised very similar exercises as the most difficult of tasks, closely resembling real combat.[68]

A passage in the *Strategicon* is particularly instructive on the relationship between such apparently sportive displays and practical training. Maurice describes the so-called "Scythian display exercise" (*Strat.* 6.1, Περὶ Σκυθικῆς γυμνασίας σχηματικῆς), in which the two wings of a cavalry division completely enveloped a large central area, and continued circling, the right wing on the outside, the left within.[69] He concludes by noting that "it was in games of this type that the cavalry once competed in March, while in winter quarters" (ὃν τρόπον ἐν τῷ Μαρτίῳ ποτὲ οἱ καβαλλάριοι ἔπαιζον ἐν τοῖ ς παραχειμα-

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[66] Wheeler (*supra* n.64) 357–361; *contra* B. Campbell, "Teach Yourself how to be a General," *JRS* 77 (1987) 13–29, at 27 n.87; K. R. Dixon and P. Southern, *The Roman Cavalry* (London 1992) 121, 126, 132–134; Hyland (*supra* n.64) 94. Wheeler rightly points out, however, that the text here is wholly descriptive and without didactic purpose.

[67] On the significance of drill for developing group *mentalité* see F. W. Smith, "The Fighting Unit: an Essay in Structural Military History," *AntClass* 59 (1990) 149–165, esp. 154–156; A. D. Lee, "Morale and the Roman Experience of Battle," in A. B. Lloyd, ed., *Battle in Antiquity* (London 1996) 199–217, esp. 207–208.

[68] *CIL* VIII 18042 [*ILS* 2487; Smallwood, *Documents … Nerva, Trajan and Hadrian* 328]. Similar displays before the emperor are perhaps meant by the comment of Cassius Dio (59.25.2) on Caligula's time on the Channel coast, where he directed the army from a bema ὡς ἐς μάχην; *cf.* Suet. *Calig.* 46.

[69] M. P. Speidel, "Roman Cavalry Training and the Riding School of the Mauritanian Horseguard," *AntAfr* 32 (1996) 57–62, at 61 n.25, complains that both Dennis and Gamillscheg have mistranslated this passage of the *Strategicon*. He identifies this exercise rather as "a slightly simpler, and insofar more realistic" version of Arrian's "Cantabrian attack," which took the form of a figure eight. Not only, however, does the text of this passage explicitly describe a single circle, but Dennis' and Gamillscheg's translations are confirmed by other passages of the *Strategicon* discussed below.

δίοις).[70] In the context of the 630s, the *Miracula Sancti Anastasii Persae* refers to these, apparently well-known, exercises taking place at Palestinian Caesarea in a festival at the beginning of March, when "a traditional custom, as you know, prevails among soldiers to equip their horses, ride them out onto the plain, and to drill them, presenting through this something just like a military engagement" (ἔθιμός τις, ὡς ἴστε, παράδοσις κρατεῖ παρὰ τοῖς στρατιώταις κοσμεῖν τοὺς ἵππους καὶ ἐξέρχεσθαι ἐπὶ τὸ πεδίον καὶ ἐγγυμνάζειν αὐτούς, ὥσπερ πολεμικόν τι σύμβολον ἐκ τούτου καταμηνύοντας).[71] These manoeuvres also recall those which Narses organised for his army in early spring of 554, "making them charge, practice regular evolutions on horseback, and perform elaborate circling movements in the manner of a war-dance" (Ναρσῆς δὲ ἐξασκεῖν γε ἐπὶ πλέον αὐτοὺς ἐκέλευε τὰ πολέμια καὶ ἐπερρώννυε τὸν θυμὸν ταῖς καθ᾽ ἡμέραν μελέταις, τροχάζειν τε ἀναγκάζων καὶ ὑπὲρ τῶν ἵππων ἐν κόσμῳ ἀναπάλλεσθαι ἔς τε πυρρίχην τινὰ ἐνόπλιον περιδινεῖσθαι, Agath. *Hist.* 2.1.2). Maurice's "Scythian exercise" is a "display exercise" (γυμνασία σχηματική), and within the training regime of the late Roman cavalry is expressly "supplementary and non-essential" (ἐκ περισσοῦ καὶ οὐκ ἀναγκαίας, *Strat.* 6.*praef.*11); yet its practical utility should not be underestimated, as it routinely rehearsed tactical procedures that Maurice elsewhere deems fundamental. It is in fact identical to the manoeuvre described in a separate treatise appended to the

[70] 6.1.8–10; *cf.* Theophanes' use of ἐξεπαίδευσεν and ὡς εἰς παίγνιον (*Chron.* 303.12–17) to describe Heraclius' large-scale mock battle in 622, and compare ταύτῃ τῇ παιδιᾷ ἐχρῶντο at Xen. *Cyrop.* 2.3.20.

[71] *Mirac.* (*supra* n.13) 135.3–6, with 134 n.52 for the date. For comment see W. E. Kaegi, "Notes on Hagiographic Sources for Some Institutional Changes and Continuities in the Early Seventh Century," *Byzantina* 7 (1975) 60–70, at 64– 65. For similar traditional cavalry exercises in the fourth century, apparently at the start of every month, *cf.* Greg. Nys. *In Quadrag. Mart.* II init. (*PG* 46.773, X.1 159 Jaeger), ἐν τῇ ἀρχῇ τοῦ ἐνεστῶτος μηνὸς τὴν πανοπλίαν ἐνσκευαζόμενοι, καὶ χωροῦντες ἐπί τι πεδίον ἡπλωμένον ἱκανῶς καὶ ὕπτιον, ἔνθαπερ ἔξεστι καὶ δρόμον ἵππων ἐκτεῖναι, καὶ μελετῆσαι τὰ τακτικά, καὶ πᾶσαν γυμνασθῆναι τὴν ἐνόπλιον ἄσκησιν.

Strategicon (12.D). Here it is presented as a method of large-scale hunting, similar to the "Scythians' battle line"; it is recommended as both a highly realistic form of training and an excellent way of capturing prisoners for interrogation. More significantly the "Scythian exercise" also relates very closely to the "crescent formation" (μηνοειδῶς), an important deployment for enveloping the enemy line that lies at the heart of the *Strategicon*'s offensive battle tactics.[72] Similarly, Maurice describes two other divisional "display exercises," ἡ Ἀλανική and ἡ Ἀφρικανή (*Strat.* 6.2–3), likewise "supplementary and non-essential," neither of which would be out of place in a tournament, but both of which encompass tactical procedures for pursuing defeated opponents and regrouping in case of enemy recovery or ambush, as outlined elsewhere in the *Strategicon* (3.5.41–50, 86–99; 12.15–21). Thus, just as a modern tattoo or tournament entertains, it also reviews essential aspects of basic military training, technique, and discipline.

Finally in this section on the evidence of *tactica*, it is worth briefly examining the subject of hunting, which attempted to simulate realistic battle conditions as an important element of cavalry training. Appended to the *Strategicon* is a short treatise on hunting wild animals, Περὶ κυνηγίων. Πῶς δεῖ ἄγρια ζῷα κυνηγεῖν βλάβης καὶ συμπτώματος καὶ συντριβῆς χωρίς. It appears to have an independent origin, though in its present form it is thoroughly integrated into the main text in both idiom and

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[72] The μηνοειδῶς battle formation is described at 3.13.5–6, 14.17–18. It was "crescentic" in that, when the enemy line was significantly shorter, the flank-guards on the extreme left of the battle line were also to act as outflankers, so that both flanks curved around the enemy line. In earlier military treatises the "crescent shape" as an offensive formation appears only in Onasander 21.5 (μηνοειδὲς σχῆμα), though it has some similarities to the defensive, and rather artificial, κοιλέμβολος or "hollow wedge" of Asclep. 11.5, Aelian *Tact.* 37.7, Arr. *Tact.* 37.7, and to the *forceps* of Veget. 3.19. A crescentic battle line appears frequently in later Roman warfare as both defensive and offensive tactics, *cf.* (probably) *Pan.Lat.* 12.6; Amm. Marc. 24.2.13, 25.1.16 (and perhaps 27.10.13, 29.5.41); Procop. *Goth.* 4.32.5–10; Agath. *Hist.* 2.9.2–6; Theophyl. Sim. 8.3.1–3, 4–5.

terminology.[73] The inclusion of a treatise on hunting should not surprise; the ancients had long noted similarities between the techniques of the chase and military training. Xenophon (*Cyn.* 12.1–9) called hunting "the best preparation for war" (τὰ δὲ πρὸς τὸν πόλεμον μάλιστα παιδεύει), and elsewhere he recommends hunting large animals as good practice in mounted weaponry skills, and outlines a simulated hunt between two riders, in which the "hunter" attempts to dismount his quarry with practice weapons (*Eq.Mag.* 8.10). Vegetius includes *cervorum aprorumque uenatores* among the occupations most suitable for a recruit (*Epit.* 1.7). The interest of Arrian in hunting, and in particular his updating of Xenophon's treatise, demonstrates the continued interest of military authors in *cynegetica*.[74] To some extent the *cynegeticus* attached to the *Strategicon* is in this classical tradition. Maurice appreciates that hunting keeps both men and horses fit and alert, "providing experience in military formations" (πεῖραν τάξεως πολεμικῆς προσφερούσης) for veteran and recruit alike. Throughout the *Strategicon* Maurice frequently acknowledges the importance of such skills, and includes techniques of spying on the enemy and capturing prisoners for interrogation among those developed by hunting.[75] There is a considerable difference in scale between Maurice and his literary antecedents, however. It is only as an afterthought that he includes the small-scale chases familiar to Xenophon and Arrian; accepting that these are exciting and develop individual skills, he regards them as dangerous, tiring, and teaching little about tactics and co-operation (12.D.158–166). Maurice instead concentrates on enormous group exercises, involving

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[73] *Strat.* 12.D. This piece is usually wrongly attributed to Urbicius, the early-sixth-century *stratégiste en chambre,* though this ascription derives from the mistaken manuscript tradition that the *Strategicon* itself is by that author.

[74] See P. A. Stadter, "Xenophon in Arrian's *Cynegeticus*," *GRBS* 17 (1976) 157–167. See generally J. Aymard, *Essai sur les chasses romaines* (Paris 1951); J. K. Anderson, *Hunting in the Ancient World* (Los Angeles/London 1981).

[75] *Strat.* 1.9.55–59; 7.A.*praef.*45–49, B.12.12–13; 9.5.89.

large formations, which stretched over seven or eight miles of flat country, with 800 to 1000 horsemen per mile (12–24).

Such exercises clearly required a high degree of co-ordination. Each trooper was assigned a position in the line and ordered not to leave it under any circumstances, just as on the battle-field. Heralds positioned along the entire front communicated the orders of the general to the troops, and conveyed to the general the reports of the scouts, who had surveyed the terrain on the previous day. The hunt was essentially an exercise in envelopment. Within three or four miles of the game, the line formed into three sections with additional flanking troops, very similar to the late Roman battle line. The scouts then led the army towards the game and directed the flanks around it "in a crescent formation" (ἐπὶ τὸ μηνοειδές); the significance of this expression was indicated above. The flanks joined, surrounding the game and continuing to circle, with the right flank on the inside. The enveloped area was to be steadily reduced until a killing ground was created and the game within destroyed by archery (63–86). Maurice recognises the problems inherent in this manner of training. He stipulates that the chase be slower and more drawn out, and even advises that preliminary training be given to recruits using experienced troopers as dummy game, in a manner somewhat reminiscent of Xenophon's simulated chases. These hunts undoubtedly had the practical purpose of providing food, and it is clear that they were more than mere sport and that injuries were incurred, but this was all part of the overall purpose of the hunt, which, perhaps even more than the simulated battle, provided tactical experience and weapons training of marked realism.[76]

[76] For the hunts as a genuine addition to army rations: the game is to be handed over to the commander of the *tagma* and no one else is to touch it (12 D.31–33). Even the smallest game was to be prevented from escaping either by tightly packed cavalry or by an infantry shieldwall (80–86). The game was distributed equally to each *tagma* in order to boost morale by sharing the products of their common labour. If the game was insufficient it was to be distributed by lot (94–99). In hunts of the dimension described the catch must have been considerable.

The occasion and regularity of such large-scale hunts are difficult to assess. Maurice explains that they could be conducted from the camp or in a more impromptu manner whilst on the march when game was startled.[77] It is interesting to note the instance of Maurice's entourage coming across a herd of deer in the vicinity of Heracleia in 596 and immediately giving chase.[78] Certainly there are indications in contemporary narrative sources that large-scale hunting was undertaken on campaign, even by the commander-in-chief.[79] There was also an incident during Julian's Persian campaign when Roman troops broke into a Persian hunting park and slaughtered its contents *venatoriis lanceis et missilium multitudine*, though the circumstances appear unusual.[80] It is doubtful, however, that Maurice's large-scale hunt was a traditional practice of the Roman army, and the similarity with the aforementioned "Scythian display drill" is suggestive of its origins. In fact, Maurice specifically notes that the grand hunt resembles the battle formation (πολέμου τάξις) preferred by the "Scythians"—for Maurice Avars and Turks— only slower and more protracted (12.D.104–105). Although there is no direct evidence for large-scale hunting as an Avaric practice, the description in the *Strategicon* is identical to the customs attested among other steppe peoples, in particular the later Mongolian *nerge*—a combination of military training and annual expedition for winter meat provision—a vast, gradually contracting ring of mounted hunters, whose high degree of co-ordination was underpinned by punishments meted out to those breaking its rules.[81] Such large-scale hunting as a regular aspect

[77] But see 1.9.55–59, where Maurice actually bans hunting in difficult terrain, reserving the activity for peacetime.

[78] Theophyl. Sim. *Hist.* 6.2.2.

[79] Theophyl. Sim. 7.2.11–13, 17.5; *cf.* 2.16.2, 7.7.4. For the problems associated with these passages see M. and M. Whitby, *The History of Theophylact Simocatta* (Oxford 1986) 199 n.69.

[80] Amm. Marc. 24.5.2; *cf.* Zos. 3.23.1–2.

[81] D. Morgan, *The Mongols* (Oxford 1986) 84–85.

of late Roman military training is therefore likely to be imitated from the Avars, and a practice whose origin lay in steppe society was artificially recreated by the military establishment of the East Roman Empire.

The evidence of non-technical literature

References to military training in narrative histories are often brief, incidental, and unspecific, seldom allowing a particular method or exercise to be identified. As with technical hand-books, it is necessary to differentiate between one-to-one weapons training and large-scale mock battles, and on this distinction some of the evidence is decidedly ambiguous. The famous comment of Josephus on the training of the Roman army, that "their drills are bloodless battles and their battles bloody drills" (οὐκ ἂν ἁμάρτοι τις εἰπὼν τὰς μὲν μελέτας αὐτῶν χωρὶς αἵματος παρατάξεις, τὰς παρατάξεις δὲ μεθ᾽ αἵματος μελέτας), is typically vague.[82] As noted above, the rarity of such references in itself can make the regular and commonplace appear unusual or unique. These problems are compounded by the fact that an army preparing for combat became one of the historian's set pieces, which often reflected his literary tastes rather than historical accuracy. The clearest illustration of this problem is a passage of Leo the Deacon (*Hist.* 3.84–86) which describes Nicephorus Phocas training his army in Cappadocia in 963. Initially this passage would appear to offer detailed information on the training methods of the tenth-century Byzantine army. Unfortunately its value is vitiated by the whole text being lifted almost verbatim from Agathias' account of Narses training his army near Rome in 554 (*Hist.* 2.1.2), written more than four centuries before. In these circumstances identify-ing genuine instances of simulated battles in earlier military training is problematic, but the foregoing study of *tactica* assists

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[82] Jos. *BJ* 3.75–76, *cf.* διηνεκεῖς μελέται at 5.309–311.

in some measure in the recognition of such practises in the historical sources.

The non-technical sources further confirm the close connection between military training and public displays and entertainments that simulated battle. The point is well made by Livy (44.9) in his description of the Roman siege of Heracleia in 169 B.C., during the campaign against Perseus of Macedon. Livy notes that some of the younger legionaries utilised a tactic that they had learned in the circus (*ludicro circensi ad usum belli verso*). In this *ludicrum circense* groups of around sixty youths constructed a sloping *testudo*, which served as a platform for a duel between two champions. There is little doubt that forming a *testudo* was a standard element of legionary training; but by imitating the particular variation of this *spectaculum* the recruits managed to capture part of the city walls.[83] Livy says that in its original ludic form, "their entrance was in part an imitation of the manoeuvres of the army, but in part was more showy than the military and closer to the style of gladiatorial combats" (*horum inductio ex parte simulacrum decurrentis exercitus erat, ex parte elegantioris quam militaris artis propriorque gladiatorium armorum usum*). The positive influence of gladiator schools on Roman military training is noted by a number of authors.[84]

It would be easy to exaggerate the practical value of the *spectacula* and *simulacra* of the arena. Vergil's vivid depiction of the mythical origins of the *Lusus Troiae* of the Augustan period has superficial parallels with the *hippika gymnasia* of Arrian's *Ars Tactica*, but Vergil is clearly describing equestrian games that were annual, restricted to a limited number of aristocratic *iuvenes*, and primarily a display of horsemanship.[85] Furthermore,

[83] Tertullian, *Ad mart.* 3.1–2, describes military training as *in armis deambulando, campum decurrendo, fossam moliendo, testudinem densando.*

[84] Cato *De re mil.* fr.14 Jordan; Val. Max. 2.3.2, *cf.* Frontin. *Strat.* 4.2.2; Veget. *Epit.* 1.11. See generally Horsmann 55–56, 135–140.

[85] See H. A. Harris, "The Games in *Aeneid* V," *ProcVirgSoc* 8 (1968/9) 14–26. On the political and ideological contexts of the *Lusus Troiae* see G. Pfister,

Vergil's wording *pugnaeque cient simulacra sub armis* and *belli simulacra ciebat* (5.585, 674), itself echoing Lucretian phrases (2.41, 324), inspired a broader poetic usage subsequently. Thus in his account of the games that Scipio Africanus held in honour of his late father and uncle in 206 B.C., Silius Italicus describes a display of swordsmanship, preceded by a boys' running race, in suitably Vergilian terms: *comminus ensis / destrictus bellique feri simulacra cientur* (*Pun.* 16.527–528).[86] Moreover, although Livy explains a specific instance of the practical application of a *spectaculum* at Heracleia in 169 B.C., the many "battles" recorded in the arena were overwhelmingly ludic in character. Suetonius reports "a battle between two opposing forces" (*pugna divisa in duas acies*) staged by Caesar in the Circus Maximus as the finale to lavish games, with 500 infantry, thirty cavalry, and twenty elephants on each side (*Iul.* 39.3). Even in cases where the participants might be soldiers or marines, rather than gladiators, it is difficult to believe that they gained much practical experience from what appear to be little more than historical pageants.[87]

The earliest instance of the Roman army engaged in a simulated battle in the field is the well-known description of Scipio Africanus drilling his land and naval forces after the capture of Carthago Nova in 210 B.C.[88] Polybius writes (10.20.2–3):

καὶ τοῖς χιλιάρχοις ὑπέδειξε τοιοῦτόν τινα τρόπον τῆς τῶν πεζικῶν στρατοπέδων γυμνασίας. τὴν μὲν πρώτην ἡμέραν ἐκέλευσε

"Lusus Troiae," in K. Dietz, D. Hennig, H. Kaletsch, edd., *Klassisches Altertum, Spätantike und frühes Christentum* (Würzburg 1993) 177–189; M. Stemmler, *Eques Romanus – Reiter und Ritter* (Frankfurt 1997) 235–237.

86 *Cf.* Livy 28.21; Zonaras 9.10.3. A similar expression of Silius Italicus at *Pun.* 7.119, *pugnaeque agitat simulacra futurae,* is merely descriptive of Hannibal personally tempting Fabius by "rehearsing the coming battle."

87 For similar "battles" *cf.* Suet. *Claud*. 21.6, *Dom*. 4.1. For Suetonius' particular interest in games see A. Wallace–Hadrill, *Suetonius*2 (Bristol 1995) 46–47. *Cf.* the large-scale, historical *naumachiae* between Tyrians and Egyptians, *Iul.* 39.4; Sicilians and Rhodians, *Claud.* 21.6, Tac. *Ann*. 12.56, Cass. Dio 60.33; Persians and Athenians, Cass. Dio 61.9; Athenians and Syracusans, Suet. *Tit.* 7.3, Cass. Dio 66.25. *Cf.* also the *paene justae classes,* Suet. *Dom*. 4.1. For discussion see K. M. Coleman, "Launching into History: Aquatic Displays in the Early Empire," *JRS* 83 (1993) 48–74.

88 For Scipio and training *cf.* Sil. *Pun.* 8.548–561.

τροχάζειν ἐπὶ τριάκοντα σταδίους ἐν τοῖς ὅπλοις, τὴν δὲ δευτέραν πάντας ἐκτρίβειν καὶ θεραπεύειν καὶ κατασκοπεῖν ἐν τῷ φανερῷ τὰς πανοπλίας, τῇ δ᾽ ἐξῆς ἀναπαύεσθαι καὶ ῥαθυμεῖν, τῇ δὲ μετὰ ταύτην τοὺς μὲν μαχαιρομαχεῖν ξυλίναις ἐσκυτωμέναις μετ᾽ ἐπισφαιρῶν μαχαίραις, τοὺς δὲ τοῖς ἐσφαιρωμένοις γρόσφοις ἀκοντίζειν, τῇ δὲ πέμπτῃ πάλιν ἐπὶ τοὺς αὐτοὺς δρόμους καὶ τὴν ἀρχὴν ἐπανάγειν.

He instructed the tribunes to train the land forces in the following manner. He ordered that on the first day they march at the double for thirty stades in full kit; on the second they were all to polish, repair, and review their full equipment; the following day to rest and relax. The day after some were to fight with blunted wooden swords covered in leather, others were to throw blunt javelins; and on the fifth day they were to begin again the same routines.

Livy follows Polybius closely but with significant variations (26.51.4–6):

primo die legiones in armis quattuor milium spatio decurrerunt; secundo die arma curare et tergere ante tentoria iussi; tertio die rudibus inter se in modum iustae pugnae concurrerunt praepilatisque missilibus iaculati sunt; quarto die quies data; quinto iterum in armis decursum est … remigium classicique milites tranquillo in altum evecti agilitatem navium simulacris navalis pugnae experiebantur.

The purpose of and occasion for Scipio's rigorous training of his troops so soon after a successful action have been the objects of some speculation, ranging from the adoption of new equipment to the introduction of novel tactics. Certainly there were important military developments around this time, though, as with Heraclius' "innovation" in 622, it is easy to see a unique event in a routine but irregularly-attested practice.[89] The specific form

[89] H. H. Scullard, *Scipio Africanus, Soldier and Politician* (London 1970) 64–66, 73–75, 228–230, interprets Scipio's training regime in 210 B.C. as a major tactical reform of traditional Roman deployment, evinced by the greater flexibility of the Roman army in Scipio's subsequent campaigns in Spain; *cf.* Horsmann 141. More tentatively, Scullard suggests that this is possibly the occasion for the introduction of the *gladius Hispaniensis*. If a specific occasion

of the training in these passages is rarely examined in depth.[90] Livy clearly used Polybius as his source, even "translating" the distance of the route marches (Polybius' thirty stades is less than a quarter of a mile different from Livy's four Roman miles), but he diverges from Polybius' account in transposing two of the days. Although Livy is occasionally vague or anachronistic on points of military detail, his rendering of Polybius requires closer examination. Livy places the day of rest on the fourth day, after the day of combat, rather than, somewhat redundantly, on the third day, after a day of cleaning and repairing equipment. This is not only intrinsically more logical, but appears also to preserve a more accurate version of the Polybian original than the existing manuscripts of the *Excerpta Antiqua*.[91] This arrangement is supported by the traditional provision of a day for polishing and repairing equipment prior to the day of battle.[92] Livy's rendering of Polybius' rather periphrastic Greek into technical Latin terminology is significant. By Polybius' ξυλί-ναις ἐσκυτωμέναις μετ᾽ ἐπισφαιρῶν μαχαίραις Livy understood *rudibus*, simply the blunt wooden swords used in military and gladiatorial training.[93] Similarly ἐσφαιρωμένοις γρόσφοις be-

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need be sought, I would suggest in addition that Livy's dating of the introduction of *velites* to 211 B.C. may also be relevant, especially given Scipio's clever application of light troops at Baecula in 209 (Livy 26.4, Polyb. 10.39.1–3).

[90] B. H. Liddell Hart, *Scipio Africanus* (London 1926) 41–42, mentions "weapon training"; F. W. Walbank, *A Historical Commentary on Polybius* II (Oxford 1967) 219, merely notes the account of "sword and javelin practice." Scullard (*supra* n.89) 65 has simply "arms practice."

[91] E. Schulze, "Beiträge zur Kritik des Polybius," *RhM* 23 (1868) 427–431, at 430–431, reconstructs the original Polybian version from Livy, and demonstrates *inter alia* that τῇ δ᾽ ἑξῆς … ῥᾳθυμεῖν should follow ἀκοντίζειν. Supported by Walbank (*supra* n.90) 219.

[92] C. M. Gilliver, *The Roman Art of War* (Stroud 1999) 101.

[93] For the *rudis* or *clava lignea* in military and gladiatorial training see Davies, *Service* (*supra* n.3) 77–83; Horsmann 133–135; for archaeological evidence see especially Stephenson (*supra* n.3). The almost universal translation of μετ᾽ ἐπισφαιρῶν and ἐσφαιρωμένοις, and likewise *praepilatus*, as "with a button (or ball) on the point" is possibly over-literal, and perhaps reflects nineteenth-century lexical entries that explicitly refer to modern fencing foils. For ἐσφαιρώμενα ἀκόντια in Greek cavalry training see Xen. *Eq.Mag.* 8.10.

comes *praepilatisque missilibus*, again blunted missiles used in training.[94] These are clearly analogous to the "sticks" (μετὰ βεργίων) and "arrows without points" (τοξεύοντας δίχα ξιφῶν) of Maurice's mock battle, the latter being identical to Vegetius' "play arrows" (*sagittisque lusoriis*, *Epit.* 1.15), the former to Arrian's "lances without blades for exercise" (ἀσίδηρα γὰρ ὄντα τὰ ἐπὶ τῇ μελέτῃ ἀκόντια, *Tact.* 34.8) and "with spear shafts without blades" (ξυστοῖς δόρασιν ἀσιδήροις, 40.4).[95]

It is also significant that Livy added the phrase *in modum iustae pugnae* to the passage, suggesting at least that what he believed Polybius was describing was a realistic contest. Livy certainly knew the difference between practical training and mere display. In addition to his comment on the siege of Heracleia noted above, he earlier refers to an annual pageant featuring a mock battle staged in his hometown of Padua, a commemoration (*monumentum*) of a Patavian victory over Spartan pirates in 301 B.C.[96] Furthermore, Livy's phrase *concurrerunt inter se* is standard in Latin authors for descriptions of pitched battles.[97] Livy himself uses almost identical language to describe the staging of a mock battle in an earlier period. In this instance he notes that there was a tradition of *simulacra pugnae* in the Macedonian army in the second century B.C. Although these exercises were an integral part of a *lustratio*, his description leaves no doubt that a serious engagement is meant.[98] The

[94] *Bell.Afr.* 72 describes Caesar's efforts to familiarise his cavalry with elephants: *equitesque in eos [elephantos] pila praepilata coiciebant*. Cf. Plin. *HN* 8.6.6 for elephants being driven through the circus with *hasta praepilata*; Quint. 5.12.17, *ad pugnam forensem velut praepilatis exerceri solebamus.*

[95] *Cf.* Leo *Tact.* 7.13, διὰ κονταρίων ἄνευ ξιφῶν ἢ σαγιττῶν ὁμοίως.

[96] 10.2: *monumentum navalis pugnae eo die quo pugnatum est quotannis sollemni certamine navium in oppidi medio exercetur.*

[97] For example, Caes. *BC* 2.25, Livy 29.18.18, Suet. *Otho* 12.

[98] For the religious context and parallels in Greece and other ancient cultures see W. Burkert, *Greek Religion: Archaic and Classical* (Oxford 1987) 82. See also H. Mitchell, *Sparta* (Cambridge 1964) 190–193, for a wider ritual context.

verbal parallels between Livy's two passages are clear
(40.6.5–6):[99]

> *mos erat lustrationis sacro peracto decurrere exercitum, et diuisas*
> *bifariam [duas] acies <u>concurrere ad simulacrum pugnae</u> … <u>ita</u>*
> <u>*concurrerent*</u>, *multaque vulnera <u>rudibus</u> facta, nec praeter ferrum*
> *quidquam defuit <u>ad iustam belli speciem</u>.*[100]

> It was customary, when the sacred lustration was enacted, to
> train the army, and dividing into two opposing battle lines to
> engage in a mock battle … They thus engaged, with many wounds
> inflicted by blunt swords, nor was anything lacking for a real
> conflict except a [real] blade.

He further refers to this event as *ludicrum certamen* and *imago
pugnae* (40.6.6). Again the mixture of display and practical
training is evident, with here an added religious context. This
Macedonian tradition may also relate to Plutarch's reference
(probably derived from Eratosthenes) to a battle staged by
Alexander's campfollowers (τοὺς ἀκολούθους παίζοντας) be-
fore the battle of Gaugamela (Plut. *Alex*. 31).

Polybius' and Livy's accounts of Scipio's training routine in
210 B.C. are usually understood as descriptions of basic arms
drill within the camp, but in both passages the exercises are
better interpreted as larger-scale tactical training. Indeed, by
*rudibus inter se in modum iustae pugnae concurrerunt praepilatisque
missilibus iaculati sunt* Livy appears to describe precisely what
Xenophon, Onasander, and Maurice outline, an army divided
into two battle lines, one force manoeuvring and using close-
quarter weaponry, while the other fires projectiles at it, the roles
being subsequently reversed (*cf.* Livy 44.34, *quatere alii pila, alii
micare gladiis*). If it is possible to identify something of the
tactical nature of this training, assessing its scale is far more
problematic. Livy's Macedonian *simulacrum pugnae*, for com-

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[99] Indeed, Stevenson (*supra* n.3) 311 mistakenly claims that this *is* a descrip-
tion of the Roman army training.

[100] *Cf.* 40.9.10 *et decursu et simulacro ludicro pugnae.*

parative purposes, is clearly a whole army forming two battle lines. In the case of Scipio's army in 210, Polybius (10.20.1, 6) twice appears to assert that the whole land force (τὰ πεζικὰ στρατόπεδα) participated in these exercises, as opposed to the whole fleet (τὰς ναυτικὰς δυνάμεις), which correspondingly undertook its own manoeuvres, terms which Livy (26.51.3) rendered *navalibus pedestribusque copiis*. That these phrases may be taken literally is suggested by another occasion in Sicily in 204 B.C., when Scipio arrayed and manoeuvred his entire forces, both on land and sea, and simulated a large-scale engagement in order to prove to senatorial envoys that they were capable of defeating the Carthaginians in battle.[101] A sweeping conclusion on such evidence would be unsound, however, and rather than attempt to discern specific instances of *armatura*, *ambulatura*, or *decursio* in these passages, it is perhaps better to recognise that training on different scales would inevitably have taken place simultaneously and progressively. As noted above, Vegetius (3.9) outlines group exercises that began with smaller tactical sub-units under the direction of tribunes (hence Polybius' τοῖς χιλιάρχοις), these later being collected together for larger-scale manoeuvres and exercises as an entire battle line. Likewise, but in a greater detail, Maurice describes training beginning at regimental level and ascending in scale through brigade and divisional exercises, which throughout made use of simulated enemies (3.5–8, 6.1–3, 12.B.16–17). Only after such individual unit training was the whole battle line deployed in a mock battle; indeed, only through practising all of these respective roles would the training regime be of substantial value.

In addition to Livy other authors suggest that sham battles

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[101] Livy 29.22: *exercitum omnem eo convenire, classem expediri iussit, tamquam dimicandum eo die terra marique cum Carthaginiensibus esset … postero die terrestrem navalemque exercitum, non instructos modo, sed hos decurrentes, classem in portu simulacrum et ipsam edentem navalis pugnae, ostendit*. In similar terms Livy 35.26.2 describes Philopoemen training his fleet in simulated combat: *prouectos in altum cotidie remigem militemque simulacris naualis pugnae exercebat.*

were a regular practice in the late Republic. In a passage of *De rerum natura* Lucretius explores the optical phenomenon that large numbers in motion at a distance appear as a single mass, and as one of his examples he cites bodies of troops exercising (2.323–332):

> *praeterea magnae legiones cum loca cursu*
> *camporum complent belli simulacra cientes*
> *fulgor ubi ad caelum se tollit totaque circum*
> *aere renidescit tellus subterque virum vi*
> *excitur pedibus sonitus clamoreque montes*
> *icti reiectant voces ad sidera mundi*
> *et circum volitant equites mediosque repente*
> *tramittunt valido quatientes impete campos.*
> *et tamen est quidem locus altis montibus unde*
> *stare videntur et in campis consistere fulgor.*

Lucretius employs similar wording to Livy's, though there are obvious difficulties in using poetry as a source in this respect, including non-technical vocabulary, poetic idiom, and the influence of literary antecedents, deliberate or otherwise. Much of the poetic imagery is conventional (*cf.* Hom. *Il*. 2.457–458, 19.362–363; *Od*. 14.267–268), and too much should not be read into the vocabulary; the phrase *belli simulacra cientes* is in part metrically determined. Nevertheless, Lucretius appears to cite as an example of optical distortion the contemporary war games of the Roman army, most probably on the Campus Martius.[102] Lucretius' tone suggests that a reader of the first century B.C. would be familiar with such large-scale exercises, though we need not follow Bailey's suggestion that the poet possibly had in mind very recent exercises organised on the Campus Martius by Caesar before his departure for Gaul—yet another instance

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[102] The use of just *campus* for Campus Martius was very common for the period; *e.g.* Livy 40.52.4; Cic. *Cat.* 2.1, *Quinct.* 18.59, *de Or.* 2.253, 287; *Fat.* 4.8, 15.34; Hor. *Carm.* 1.8.4, 1.9.18, 3.1.11, 3.7.26, *Sat.* 1.6.126, 2.6.49, *Epist.* 1.7.59, 1.11.4.

of seeking a specific occasion for a general phenomenon.[103] Nevertheless, the Campus Martius was traditionally dedicated to military proceedings and exercises, as well as sports generally; it was certainly used from earliest times for complete musters of the Roman army and for the training and review of both cavalry and infantry.[104] Lucretius' lines *et circum volitant equites mediosque repente / tramittunt valido quatientes impete campos* seem at least to describe specific cavalry manoeuvres, with skirmishing on the flanks followed by a charge. These large-scale manoeuvres were apparently carried out at speed, indeed that is the very point of the example, and involved both infantry and cavalry. This aspect recalls an earlier passage of *De rerum natura* (2.40–43):

si non forte tuas legiones per loca campi
fervere cum videas belli simulacra cientes
subsidiis magnis et equum vi constabilitas,
ornatas armis pariter periterque animatas.

Again, Lucretius portrays legions exercising with cavalry support, and although his point here is not to be impressed by mere show, by the *appearance* of battle alone, the balance of the evidence points to these *belli simulacra* being large-scale mock battles rather than parade ground reviews.

One further source provides a clear description of legions participating in simulated battles in the late Republic. Appian writes that during the hurried mustering of troops in late 44 B.C. Octavian "went to watch the training exercises of the two legions that had deserted from Antony, which formed up to face each other and unstintingly did all they had to do in a real

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[103] C. Bailey, *Titi Lucreti Cari De Rerum Natura libri sex* II (Oxford 1947) 804–805, 856–857.

[104] For military musters, exercises, and displays on the Campus Martius see for example Dion. Hal. *Ant.Rom.* 5.13.2, ἵπποις τε λειμῶνα καὶ νέοις ἀσκοῦσι τὰς ἐνοπλίους μελέτας γυμνάσων ἐπιτηδειότατον. *Cf.* Livy 1.16.1, 1.44.1–2; Verg. *Aen.* 7.162–165; Hor. *Carm.* 1.8.4–7, 3.7.25–26; Dion. Hal. 2.56.2, 4.22.1–2; Gell. *NA* 15.27.4–5; Cass. Dio 75.5.5; Veget. *Epit.* 1.10.

battle, excepting only killing" (ἐθεᾶτο γυμνάσια τῶν δύο τελῶν τῶν αὐτομολησάντων ἀπ᾽ Ἀντωνίου, διαστάντων τε ἐς ἀλλήλους καὶ δρώντων ἀφειδῶς ἔργα πολέμου πάντα πλὴν ἐς μόνον θάνατον).[105] This example is thoroughly in accord with the literary and historical tradition of *simulacra pugnae*. The military training that is real in every respect except for actual killing is familiar from authors as diverse as Livy, Josephus, and George of Pisidia. Delighted with this spectacle (θέα), Octavian made gifts of money; again practical training methods double as formal review. The passage is particularly significant in that it indicates the numbers involved—apparently 5000 to 6000 on each side—and therefore a substantial exercise. Finally, it is interesting to speculate on the context of this particular example. Recalling Livy's description of the earlier Macedonian practice of violent mock combat as part of a *lustratio*, it is possible that in this θέα presented by two legions, which had recently changed sides to serve under their former enemy, there is an element of purification or expiation.[106]

The scanty narrative sources for the imperial period do not permit a detailed study of this theme, but a few occasional references appear to attest a regular practice. Quintilian, writing in the reign of Domitian, compares an orator's rhetorical preparation for the law courts to military training, which would be pointless, "unless by such simulations of battle we are accustomed to the true contest and the real battle line" (*nisi quibusdam pugnae simulacris ad verum discrimen aciemque iustam consuescimus*, 2.10.8).[107] Quintilian appears to be comparing *pugnae simulacra* to rhetorical *suasoriae* and *controversiae*, which were similarly practical exercises in simulation. The passage at

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[105] App. *BC* 3.48. The legions were the Martian and the Fourth (3.45).

[106] See A. W. Lintott, *Violence in Republican Rome* (Oxford 1968) 42, for decimation as a comparable "purification rite."

[107] *Cf.* a similar allusion at 5.12.17. Aulus Gellius, *NA* 6.3.52, similarly compares rhetorical exercises with *decursiones ludicrae* and *simulacra proeliorum voluptaria.*

least suggests that his readers would be familiar with military training of this type. The *Vita* of Avidius Cassius in the *Historia Augusta* (*Avid.* 6.2–4) reports that he

> *arma militum septima die semper respexit, vestimenta etiam et calciamenta et ocreas … exercitium septimi diei fuit omnium militum, ita ut et sagittas mitterent et armis luderent.*

The last clause is particularly interesting; the wording is undeniably vague but in the context of the passages cited earlier this is possibly another instance of one formation attacking another under fire. The *Historia Augusta* attributes similar arrangements to Maximinus, when a tribune in Legio IV, apparently early in the reign of Severus Alexander (*Maxim.* 6.1–2):

> *accepta igitur legione statim eam exercere coepit. quinta quaque die iubebat milites decurrere, inter se simulacra bellorum agere, gladios, lanceas, loricas, galeas, scuta, tunicas et omnia arma illorum cotidie circumspicere.*

The author appears to have confused Maximinus' tribuneship of Legio IV Flavia with his later position as *praefectus tironum* on the Rhine, in which case this routine would have had a much wider application than a single legionary command.[108] Both these training regimes are reminiscent of Scipio's at Carthago Nova, as narrated by Livy, though no direct textual connection is evident. In particular, Maximinus' routine *quinta quaque die* recalls that of Scipio, which recommenced its sequence every fifth day. In fact, the differences between these two passages of the *Historia Augusta* suggest less a common source than the author's assumption of what military training involved, indeed what it *should* involve, given that both passages aim to

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[108] *HA Maxim.* 5.5 makes the odd comment that this legion was newly formed from recruits, which is clearly incorrect. For Maximinus as *praefectus tironum cf.* Herodian 6.8.1–2, *HA Sev. Alex.* 59.7. For Maximinus training the army generally, *cf.* Herodian 6.8.1–2, 7.1.6–7, the latter repeated almost verbatim in *HA Maxim.* 10.4. For a reconstruction of Maximinus' career as a specialist trainer see Speidel (*supra* n.2) 68–69.

compliment the commanders concerned. Just as Livy's version of Scipio's activities in 210 B.C. says as much, if not more, about practices in his own day as in the late third century B.C., these passages of the *Historia Augusta* imply, at least, that its late-fourth-century author believed mock battles to be a regular part of effective military training.

Conclusions

There can be no doubt that in all periods the Roman army engaged in mock battles as part of its broader training. Even in the absence of specific references in both technical and non-technical works, the Roman emphasis on thorough, regular, and realistic training would presuppose such exercises.[109] Certainly other successful armies in different historical periods have found that simulated battles offered troops experience as near to combat as possible, and in modern armies such "combined manoeuvres" or "combined exercises" in large part compensate for a lack of actual field experience.[110] Such modern comparanda are of some relevance to the Roman army; throughout Roman history pitched battle, although the most decisive and dangerous experience of warfare, might have been a relatively rare event in a soldier's term of service, especially in the first and second centuries A.D. There follows a summary of the importance of this particular military tradition, which, given the length of the period under discussion, will restrict itself to broad conclusions.

Simulacra pugnae were undoubtedly important in raising and maintaining individual and collective morale, and would have

[109] Horsmann 146–147.

[110] For example, ninth-century Frankish armies engaged in *ludi causa exercitii*: Nithard *Histories* 3.6, ed. P. Lauer (Paris 1926); for comment see J. L. Nelson, *The Frankish World 750–900* (London/Rio Grande 1996) 81. Several late-nineteenth-century European armies practised regular large-scale manoeuvres, with tactical and weapons training: Spiers (*supra* n.27) 250, 262–264.

especially served to integrate recruits and veterans. Less-experienced troops would be familiarised with the shocks, sights, and sounds of combat in realistic conditions. These exercises were far more than games; the recruit was required to overcome his fear and face an "enemy" who would be shooting missiles and generating all the tumult of battle. Such large-scale exercises would also engender inter-unit competition; the opportunity for regiments to out-perform one another, especially under the commander's or emperor's gaze, was a significant factor in promoting esprit de corps.[111] Mock battles, therefore, although only one element in preparing individuals and groups for battle, were vital for improving and sustaining discipline, group identity, and physical endurance. The next step in this process was to expose "new" troops to minor engagements with the enemy to improve their confidence and experience.[112] Certain details remain obscure, however, including whether foreign or allied contingents joined the Roman army in these large-scale exercises, which might have served as an important channel for the diffusion of military methods and technology.[113]

Simulated battles also enhanced lines of communication between officers, units, and individuals. Conveying and understanding commands and signals in battle, both visual and oral, was an important, if rather traditional, element in military handbooks, especially in the context of the noise, confusion, and

[111] For rivalry, often violent, between units see *e.g.* Jos. *BJ* 5.502–503, Tac. *Ann*. 2.68. For the possible rewards of competitiveness see Suet. *Galba* 6.3. Vegetius, *Epit.* 3.4., notes *aemulatione virtutis proelium magis necesse habeant optare quam otium.*

[112] *E.g.* Sall. *BJ* 86; Veget. *Epit.* 3.10–12; Zos. 4.23.1–4; Maur. *Strat.* 7.A.11.

[113] Maurice is ambiguous. At *Strat.* 2.6.33–35 he commends foreign allies (τοὺς ἐθνικούς) in the role of *cursores*. *Cf.* 11.2.85–87, where the use of foreign infantry forces is noted. At 8.2.80 he bars allies from Roman exercises, though the material in Book 8 comprises traditional maxims; but *cf.* 3.5.77–85, 120–126; 6.*praef.*3–5; 7.A.15; 8.2.17, 37, for Maurice's repeated concern for tactical security.

stress emphasised by the narrative sources.[114] As noted above, Maurice regards simulated battles as useful even to the merarchs, the divisional commanders, because their abilities to co-ordinate their formations were tested in near-combat conditions. These exercises would have given subordinate officers valuable experience also, and this was especially important given the conditions of battle in antiquity, in which the general's role was primarily to stimulate morale by conspicuous displays of leadership. Although battle orders were probably conveyed to unit commanders before an engagement, a general's ability to control the course of a battle once it had commenced was limited to the application of reserves.[115] Difficulties of command and communication in action meant that important responsibilities, and sometimes critical decisions, were delegated to subordinate officers, with the resulting risk of uncoordinated action and disorderly manoeuvring throughout the battle line as a whole. Practice of battlefield manoeuvres in the face of a "real" enemy thus allowed a greater reliance on senior and junior officers. Recent studies of the role of the general in ancient battles have challenged the long-held view that the frequent and thorough training of the Roman "military machine," combined with its command structure, reduced the degree of control required of a commander-in-chief, and generally minimised his effective role. The regular practice of mock battles, and especially Maurice's comment on their benefit to divisional commanders, tends to argue for the former orthodoxy. Ultimately it is a question of balance; Roman commanders were certainly more able and less "amateur" than conventional wisdom has

[114] For battle signals in *tactica* see Veget. *Epit.* 2.22; 3.5, 9; Syrianus *De re strategica* 30; Maur. *Strat*. 2.14–15, 17–20. *Cf.* Ael. *Tact.* 35; Arr. *Tact.* 27. The limitations are illustrated by the assertion of Procopius, *Goth.* 2.21–39, that by his day the various trumpet signals of the Roman army had fallen into disuse, and only the basic commands of advance and retreat could be distinguished.

[115] See Goldsworthy 116–133, 149–163, 167–170; Nicasie (*supra* n.62) 209–10.

maintained, but they were also usually blessed with thoroughly trained armies and highly competent senior and junior officers who understood clearly their responsibilities and tactical roles.[116]

The most important aspect of mock battle, however, appears to have been the opportunity it offered to practise detailed tactics and specific use of weaponry, and certainly in earlier history this seems to have been the primary purpose. An abiding feature of the sources is that one of the opposing forces fired missiles while the other advanced or manoeuvred under fire. Indeed, in the *Cyropaedia*, the earliest description of such exercises, the principal aim was to demonstrate the characteristics and relative advantages of close-quarter combat and long-distance skirmishing. Maurice assigns similar tactical roles to the opposing sides. The explicit descriptions in *tactica* permit a clearer interpretation of the more obscure historical accounts. Thus this division of tactical roles corresponds to the "volley and charge" battle tactics of the Republic and early Empire. Livy's wording *rudibus inter se in modum iustae pugnae concurrerunt praepilatisque missilibus iaculati sunt* (*cf.* Polybius' τοὺς μὲν μαχαιρομαχεῖν ξυλίναις ἐσκυτωμέναις μετ' ἐπισφαιρῶν μαχαίραις, τοὺς δὲ τοῖς ἐσφαιρωμένοις γρόσφοις ἀκοντίζειν) similarly appears to describe one force being trained to throw *pila* against another force practising the charge. Mock battles therefore taught specific tactics and drill, such as, for example, volley firing, which, with the factors of range, speed, timing, and command, required regular practice to be effective.[117] Similarly, the successful infantry charge required timing, unit cohesion, and psychological preparation, as well as the skill to deflect enemy

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[116] Goldsworthy 167–169.

[117] Horsmann 152–153; Goldsworthy 191–201; Stephenson (*supra* n.3) 314. *Cf.* Caes. *BC* 3.93, where legionaries halt their advance and redress their line before their *pila* volley; and their inability to do so at *BG* 1.52, Tac. *Hist.* 2.42.

missiles.[118] It was for corresponding tactical applications that simulated combat was also important to the sixth-century army, equipped with an increasingly varied panoply and facing enemies who employed diverse tactics requiring different responses. Maurice notes that the superior archery of some opponents, such as the Avars and Persians, required Roman troops to close with them in hand-to-hand combat as fast as possible.[119] Conversely the close-quarters weaponry preferred by Germanic peoples allowed Roman armies to engage in long-distance skirmishing to their great advantage.[120]

These are of course basic military tenets.[121] But they offered a framework in which the Roman army perfected its skills and was trained to respond to the strengths and weaknesses of its enemies' tactics. Over this long period the specifics of battle tactics changed considerably, but certain general characteristics of ancient warfare underpinned a continuous tradition of training. Attacking in line and maintaining unit formation and cohesion always required practice and discipline, whether applied to the "volley and charge" of the later Republic and early Empire, or to the denser phalangal formations of later Roman warfare. Manoeuvring under fire was especially difficult, since

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[118] Goldsworthy 201–206.

[119] Persians: *Strat.* 11.1.43–45, 59–63; *cf.* Amm. Marc. 24.2.5, 6.11; 25.1.17; Liban. *Or.* 18.266; Theophyl. Sim. 3.14.6–8. Avars: *Strat.* 11.2.52, 70–72. This clearly lies behind the comment of Theophylact (8.2.11) that when fighting the Avars in 602 the Romans were ordered to use only the spear. Closing quickly with expert archers: *Strat.* 7.A.*praef.*33–34. The point is adapted by Leo (*Tact.* 18.42) and applied to Magyars and Pechenegs.

[120] Goths at Taginae: Procop. *Goth.* 4.32.6; Vandals at Tricamerum in 533: *Vand.* 2.3.9; general comment on Vandals relying on close-quarters fighting: *Vand.* 1.8.27. Note especially Belisarius' analysis of the tactics of the Gothic War, *Goth.* 1.27.4–29. Roman superiority in firepower over Germanic peoples is attested in the early third century: Herodian 6.7.8, 7.2.2.

[121] The *locus classicus* is Miltiades at Marathon (Hdt. 6.112). For other examples *cf.* Ventidius against the Parthians in 38 B.C. (Frontin. *Strat.* 2.2.5); Lucullus against Tigranes (Plut. *Luc.* 28.1); Agricola in Tac. *Agr.* 36. The point is well made by Tacitus concerning a battle between Parthians and Sarmatians: *se quisque stimulant, ne pugnam per sagittas sinerent, impetu et comminus praeveniendum*, and explained by Julius Africanus, *Cest.* fr.1.1.83–86.

missile attacks aimed as much to disconcert enemy deployment and manoeuvres as to inflict casualties. In this sense the military tradition of large-scale simulated battles was a broad one, which accommodated differences in deployment, tactics, and weaponry in each period. This characterisation offers the best context for Heraclius' καινούργημα in 622. Admittedly the practice of simulated battles is not directly attested between the late fourth and mid sixth centuries, but the condition of the sources for much of this period makes an argument from silence hazardous—the absence of references to a routine practice in often meagre and defective sources is not proof of its disappearance. Furthermore, that Maurice, writing in the 590s, took account of the first-century *Strategicus* of Onasander, which itself drew stylistically upon Xenophon, is an indication of the importance of literary antecedents and conceptual models in compiling technical handbooks, rather than the intermittence of the practice itself. George of Pisidia's assertion of Heraclius' novelty is without doubt panergyric, yet such exercises by their very nature were open to adaptation according to contemporary circumstances. In this instance, late-sixth-century developments in Roman cavalry, especially the increased importance of the "composite lancer-archer" and the imitation of the tactics and equipment of Avar cavalry, required complex drills and well-rehearsed manoeuvres unfamiliar even a generation before. Mock battles and large-scale exercises in the 620s, therefore, would require "innovations," though these would be variations on an ancient theme.

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