

University of Wisconsin: Eau Claire

More than a Maniple is too Much
The Manipular formation used by Republican Roman Armies
(circa 218 -168 BCE)

Capstone Submitted to Professor Jane Pederson

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Abstract:

The use of the maniple formation by Republican Roman field armies evolved over the fourth, third and second centuries BCE. The Battle of Cannae, and the lessons learned therein, provided a catalyst for more rapid evolution of Roman battle tactics. The article demonstrates the tactics used in each battle to show the reader the change over time for Roman army organization and deployment as a result of their defeat at Cannae.

INTRODUCTION

By the late fourth century BCE¹ Rome had conquered much of modern day Italy and was a maturing power in the Mediterranean. In the First Punic War (264-241) Rome defeated Carthage and acquired Sicily as its first overseas province. The late third century saw Rome again at war against Carthage and the two powers vied for control of the Mediterranean on an even greater scale. As the second century began Rome found itself embroiled in the affairs of the Hellenistic Successor Kingdoms² of the Greek East. Historians recognize that the Romans succeeded in building their empire, and as such it follows that the Romans were successful in battle against their enemies for several centuries. While many Classicists claim that Rome was successful in the various wars because of the alliance system that afforded her a massive reservoir of manpower, this is simplistic. Vast reserves of manpower were important in long drawn out wars, but individual battles were won by other means. Although the Romans were not universally victorious, they had a clear penchant for winning battles.

The tactically superior manipular formation that the Romans employed against their enemies was the main reason for this superiority. The Romans gradually shifted from the more conventional phalanx formation to the manipular, trilinear organization throughout the mid to late fourth century. By the end of the third century it had been in use for over a hundred years. The new formation offered significant tactical advantages to other formations in use and was

¹ All dates BCE hereafter unless specified otherwise.

² "Successor" refers to the various political entities that emerged from Alexander's empire that fragmented after his death in 323, each following from a different of Alexander's generals.

particularly effective against a phalanx if used correctly. Four battles in particular demonstrate how the legion and its unique tactical structure were successful against the phalanx.

The Battle of Cannae (216) will be examined first, to demonstrate the result of the Romans' failure to deploy their legions in the manipular formation. The Battle of Cannae was the quintessential Roman defeat. The Romans entered the battle with vastly superior numbers and equipment, fighting on their home territory (and thus well supplied) and yet they were utterly annihilated. This battle gives an example of how the manipular formation could have been useful to the Romans had it been employed. The battles of Zama (202), Magnesia (190), and Pydna (168) all provide examples of the many ways that the Romans could adapt the legion to the situation to emerge victorious, despite being at a disadvantage in numbers and strategic placement. Lastly, the lessons from these battles will be applied to the Battle of Cannae to explain how the Romans learned from their mistakes in subsequent battles.

This examination will provide a counterpoint to the argument that Rome was ultimately successful due to the great amounts of manpower they were able to mobilize to fight drawn out wars successfully. Arthur Eckstein argues in his book *Rome Enters the Greek East* that the Romans were not more militaristic or aggressive than their neighbors.³ Instead, he argues that in a group of states in which no single state holds dominance, all states tend toward similar disposition. Thus Rome was unlikely to have been any more ruthlessly militaristic than its neighbors. He puts forth the argument that what made the Romans ultimately successful was their ability to incorporate conquered territory into "the fold" so to speak. In essence they gave the people of conquered territory a stake in Roman success so that they had more desire to

³ Another common argument for Roman success is that the Romans were simply more militaristic, barbaric and ruthless than any of their rivals.

fight for Rome. This gave the Romans a significant advantage in manpower and resources.

Eckstein argues that this is what made the Romans more successful than their rivals.⁴

Eckstein is not alone in this assessment. John Briscoe, among others, argues that Rome would have lost the Second Punic War (218-201) without the massive number of men at their command compared with the Carthaginians. This assertion undoubtedly has much merit given the number of men the Romans lost during that conflict (roughly 100,000 in the first two years alone).⁵

These assessments describe the success of Rome on a very broad scale. With the loss of over a hundred thousand soldiers in just two years, most states would have had a difficult time sustaining a war effort. Rome, however, was able to draw upon massive reserves to win the Second Punic War. Despite having greater numbers of soldiers at their command, the Romans many times found themselves fighting battles while outnumbered, and yet managed to emerge victorious. These victories came as a result of the unique tactical formation that the Romans developed in response to the old phalanx formation that afforded Roman armies greater maneuverability and flexibility.

The classic phalanx formation had been in use by the Greeks and Near Eastern armies for centuries. Typically a phalanx consisted of a single line of massed heavy infantry armed with a long spear (later a pike) as well as heavy armor. The soldiers stood shoulder to shoulder with the pikes extended forward to present an intimidating wall of spears, often several hundred

⁴ See Arthur Eckstein, *Rome Enters the Greek East: From Anarchy to Hierarchy in the Hellenistic Mediterranean 230- 170 BC*, (Oxford: Blackwell Publishing, 2008): 20, 376-81.

⁵ John Briscoe, "The Second Punic War", *Rome and the Mediterranean to 133 BC, Vol. 8 of The Cambridge Ancient History 2nd Ed.*, edited by A.E. Astin et al, (Cambridge University Press, 1989), 74.

meters long. Generally the formation was not less than sixteen men deep and was often up to thirty-two deep. This increased the density of the line and allowed every soldier in the line to help hold it in place. (See Appendix 1) The dense wall of pikes, which were a two handed model called a sarissa in the late third century, along with the deep mass of heavily armored soldiers presented a formidable challenge to any army. Used correctly, on flat ground with minimal obstacles, the phalanx could be utterly devastating and nearly impossible to rout. There are, however, significant tactical problems with the formation that will be addressed herein in the attempt to demonstrate how the Romans were so successful on the battlefield.⁶

Maniples (“Handfuls”) were somewhat akin to miniature phalanxes. They were generally about 120 men and each legion fielded about 30-35 maniples. Louis Rawlings quotes Hans Delbruck in saying “The phalanx had been given joints”.⁷ These units acted as independent phalanxes, commanded by officers (centurions) who could order them to retreat or advance, turn from side to side, increase in width and decrease in depth (i.e. shift men from behind to the sides to make the unit longer instead of deeper) or vice versa, regardless of what the rest of the line was doing. This independent control of small groups of men was impossible in the phalanx. Of course the maniples could, and often did, work together to form a solid line similar to the phalanx if circumstances required.⁸

⁶ Simon Anglim, Phyllis G. Jestice, Rob S. Rice, Scott M. Rusch, and John Serrati, *Fighting Techniques of the Ancient World*, (St. Martin’s Press: New York, 2002): 37.

⁷ Louis Rawlings, “Army and Battle during Conquest of Italy (350-264 BC)” in *A companion to the Roman Army*, ed. Paul Erdkamp, (Blackwell Publishing Ltd., 2008): 55.

⁸ Rawlings, 55.

The development of the maniple formation took place slowly over the fifth and fourth centuries. However, annalistic accounts from the third century seem to imply that the maniple had always existed. It seems to have been adapted or assimilated from the Samnites during their wars with the Romans in the late fourth century. Pyrrhus of Epirus⁹ experimented with using light infantry organized in the Roman style (i.e. in maniples) during his invasions of Italy (~280-275). The Roman army seems to have shifted back and forth from using the phalanx to deploying in maniples as different situations arose. In 255 the Romans were defeated at Tunes in North Africa during the First Punic War at least partly because they had used the phalanx formation. They used the maniples against Pyrrhus when he gained his “Pyrrhic Victories”. Clearly the maniples had been in use for some time prior to Hannibal’s invasion of Italy in 218 and, as the Romans generally campaigned for significant portions of each year, they had plenty of opportunity to refine its use.¹⁰

With the advent of the maniple as an independent unit, the Romans also began to use a system to deploy the troops in an orderly manner¹¹. The triple line (*Triplex Acies*) system allowed troops in the front to be supported and relieved by subsequent lines. Troops in the first line, called *hastati* (“Hasta-Users”) were the first to fight. The Romans deployed their troops with ten maniples of *Hastati* at the front, with a significant space between each

⁹ Northern Greece and Albania.

¹⁰ Dexter Hoyos, “Age of Overseas Expansion (264-146)” in *Companion to the Roman Army*, ed. Paul Erdkamp 63-79, (Oxford: Blackwell Publishing Ltd., 2008): 75; Michael Sage, *The Republican Roman Army: A Sourcebook*, (New York:Routledge, 2008): 63-8.

¹¹ As opposed to either; not replacing troops at the front at all, or having to replace an entire line of the phalanx while still keeping troops at the front to prevent the enemy from taking advantage of the retreat of the fatigued troops. This is quite difficult when the phalanx is packed together chest to back, and shoulder to shoulder in one solid mass in order to maintain the density (and thus ability to hold ground) of the formation.

maniple.¹² When these front line troops grew tired, the second line would be rotated in. While most historians are not entirely clear on the mechanism for this relief system, it is likely that the maniples of the second line, which are generally arrayed behind the *Hastati* directly behind the gaps between the maniples, simply stepped forward as the first line stepped back. The second liners, called *principes* (“Foremost”) were the legion’s most experienced and capable fighters. With the input of fresh troops the enemy, who likely did not have a mechanism for relieving tired soldiers with fresh ones, often broke. If the enemy held the Romans could feed in their third line soldiers, called *triarii* (“Third-liners”) who were often the oldest and least fit soldiers.¹³ (See Appendix 2)

The numerical strength of the legions changed quite often, but it was usually maintained around 5500 soldiers until Marius’s election to Consul in 107 and later Caesar pro-Consulship in Gaul in 59-50, who raised it to over 6000. This translated into 1400 *Hastati*, 1400 *Principes*, and 700 *Triarii*, and 1400 *Velites* or skirmishers and about 300-500 cavalry. P.A. Brunt estimates the total number of Roman and allied soldiers in arms to be 127,500 in 200, 182,400 in 190, and 124,600 in 168. At the time just after the battle of Cannae he estimates over 200,000 troops under Roman command.¹⁴ This translates to about 10% of the adult male population of Italy at war each year.¹⁵

¹² There is debate on exactly how much space but it is generally accepted that at least half of a maniple in length. However, it was enough room for each maniple to maneuver independently around obstacles on the battlefield without interfering with the order of, or colliding with, adjacent maniples.

¹³ Rawlings, 55-56.

¹⁴ These numbers are based on the average strength of a legion multiplied by the number of legions in service. They may be somewhat inaccurate because legions may not have been at full strength. They do, however, give the reader a sense of the vast resources in manpower at the Romans’ command.

¹⁵ P.A. Brunt, *Italian Manpower*, (Oxford: Clarendon Press, 1971): 423-6.

BATTLE OF CANNAE

The Battle of Cannae is the quintessential Roman defeat and is considered by some to be the culmination of Hannibal Barca's military genius.¹⁶ This may be overstated, but the result of the battle was a catastrophic loss for the Romans. At the beginning of the Second Punic War Hannibal Barca of Carthage marched his army, complete with elephants and cavalry, across Iberia, through Gaul and across the Alps into Italy. This logistical feat alone would be enough to keep him in the history books but upon entering Italy Hannibal proceeded to crush not one or even two, but three entire Roman armies. The Battle of Trebia (218), though a minor military victory, persuaded several Gallic tribes to join Hannibal, greatly increasing his manpower. At Lake Trasimene (217), the second Roman defeat at the hands of Carthage during the Second Punic War, Hannibal ambushed the Romans and crushed their army against the shores of the lake. (See Appendix 3) Hannibal then moved south and pillaged and devastated the Italian countryside for about a year before the Consuls Lucius Aemilius Paullus¹⁷ and Gaius Varro combined their armies and met Hannibal at Cannae in 216.¹⁸

¹⁶ It has been studied by military leaders since the battle ended. General Norman Schwarzkopf said "I learned many things from the Battle of Cannae which I applied to Desert Storm"; Adrian Goldsworthy, *Cannae*, (London: Cassell, 2000): 9-12.

¹⁷ Lucius Aemilius Paullus Macedonicus's father.

¹⁸ Livy, *Livy with an English Translation by B.O. Foster Vol. 5*, Transl. B.O. Foster, (Harvard University Press): 345.

Because the Consuls had combined their armies into one, they alternated their command every other day. Paullus wanted to wait to confront Hannibal for more favorable terrain, but Varro did not. On the day that Varro held supreme command he ordered the legions to form. Instead of forming the usual triplex acies the Romans sought to capitalize on their great numerical advantage and use simple brute force to defeat Hannibal's army. Thus, Varro ordered the legions to form a phalanx formation with the maniples deployed very close together and essentially marching with more depth than width to improve the staying power of the infantry.¹⁹

Hannibal deployed his least reliable and weakest infantry at his center, which was a slight semi-circle extending outward towards the Roman line. At the flanks he placed his heavy cavalry, and behind the cavalry, facing perpendicular to the front line, he placed his Carthaginian phalanx, half on each side. Hannibal had the advantage in cavalry but was outnumbered about two to one by the Roman infantry, who deployed about 80,000 troops to the Carthaginian 40,000.²⁰ (See Appendix 4)

When the battle began the Romans surged their massed infantry forward. The echeloned Carthaginian infantry at the front held for a short time and then began to fall back. The semi-circle echelon formation began to invert, wrapping around the Roman battle line. Meanwhile the Carthaginian cavalry was busy driving the Roman and allied cavalry from the

¹⁹ This was done mainly so that all of the Roman infantry could fit into the relatively small plain of the battle field. The maniples were indistinguishable from each other except with their unit standards because they were deployed so close together and were marching forward with only perhaps four to six men at the front and 30 men deep instead of the opposite. Because the Roman infantry had continually shown itself the superior of any the Carthaginians could field the Roman commander Varro intended to simply bulldoze the Carthaginian army with his far more numerous and superior heavy infantry. Polybius, *On Roman Imperialism*, Transl. Evelyn S. Shuckburgh, (South Bend, Indiana: Regnery/ Gateway, Inc., 1982): 172.

²⁰ Livy, Vol. 5, 351; Polybius, 172-3.

field. As the Carthaginian infantry gave more ground, the Roman infantry began to surge forward without direction from their officers. Since the maniples were deployed so close together to form a phalanx formation it was extremely difficult to maintain the troops into those distinct units. This caused much confusion later in the battle because the maniples' advantage is dependent upon the maneuverability and flexibility afforded by distinct unit formations. Eventually what little manipular cohesion there was at the beginning of the battle was lost and the Roman heavy infantry line had degenerated into a great massed group instead of any disciplined formation with no ability to reform its ranks under any circumstance.²¹ (See Appendix 5)

As the Carthaginian center fell back the disorganized Romans began to surge forward. At the same time Hannibal's phalanxes, who had started the battle behind the Carthaginian infantry but had just been passed by the advancing Roman line, charged into the Roman flanks. The Roman infantry was not able to respond adequately to this threat and was then engaged on three sides. The Carthaginian cavalry, after driving their Roman counterparts from the field returned and hit the Roman infantry in the rear.²² (See Appendix 6)

Now engaged on all sides, the Roman infantry had no way to escape and no means to reform their troops to offer cohesive or organized resistance. The fighting degenerated into a chaotic battle of single Romans fighting against Carthaginians in organized formations. The surrounded Romans fought to the last man. However, without cohesive formations the Romans were doomed. After eight to ten hours of fighting the Romans were all defeated.

²¹ Livy, Vol. 5, 353; Polybius, 174.

²² Livy, Vol. 5, 355-7; Polybius 174.

Between fifty and seventy thousand Roman soldiers lay dead on the field, including Lucius Paullus and Livy claims about 25-30% of the Senate members, who served as officers, died there as well. Hannibal won almost free reign for his army in Italy, which he maintained until near the end of the war when he was drawn back to Africa to engage Scipio at Zama in 202.²³

BATTLE OF ZAMA

The battle of Zama proved to be the culminating battle of the Second Punic War. The Romans in the late third century were embattled and besieged by Hannibal of Carthage, who had been ransacking and pillaging Italy for almost fifteen years (See Appendix 7) by the time Publius Cornelius Scipio Africanus²⁴ was given his consulship of 205.²⁵ Africanus immediately began preparations for an invasion of Africa. While two of Scipio's legions were exceptional²⁶, at least half of his 25-30 thousand troops were replacements, and as such he began an extensive training program at his camp in Sicily while preparations for the invasion were handled.²⁷

²³ Livy, Vol. 5. 359-363; Polybius, 175; Cassius Dio, *Dio's Roman History Vol. 1*, Transl. Ernest Cary, (Harvard University Press, 1961): 141-3.

²⁴ Africanus was a titular cognomen given to Scipio after his defeat of Hannibal at the Battle of Zama.

²⁵ An office which he held, as proconsul, until 201.

²⁶ Veterans from Italy who had fought Hannibal several times.

²⁷ Mainly the construction of a transport fleet to ferry the troops over to the African coast. Adrian Goldsworthy, *The Punic Wars*, (London: Cassell, 2000): 285-8.

After making the crossing from Sicily to Africa, Scipio first began to besiege the Carthaginian port city of Utica. With the presence of the Roman army in Africa the Carthaginian leaders ordered Hannibal, who was still fighting in Italy, to return home to defend the capitol. After a series of skirmishes in which the Romans were easily victorious, Hannibal arrived with his veteran army and lured Scipio into battle at Zama.²⁸ Scipio's Numidian ally Masinissa arrived with a significant cavalry force to help just days prior to the battle.²⁹

Before the battle Scipio rushed his army forward and captured a hill that provided a significant strategic advantage, leaving Hannibal on the plain with little water. This forced Hannibal to commence the battle quickly, before he ran out of water for the army. The Romans deployed their army in a slightly different manner than is normally done by the legions. Instead of three lines with each line overlapping the gaps between the maniples in the line in front, making a laid brick pattern, Scipio ordered the maniples to form columns, with each maniple directly behind those of the line in front. Between the maniples in the empty space columns Scipio placed his *Velites* and other lightly armed skirmishing troops. These men had orders to disperse at the sight of the elephants between the lines and allow the elephants to advance through the columns to be disposed of at the rear, all the while tossing missiles and spears at them to inflict casualties.³⁰

²⁸ After a failed truce, Scipio was angry that the Carthaginians had not upheld their end of the bargain and marched forth to destroy Carthage out of vengeance. In his way were Hannibal and his army.

²⁹ Goldsworthy, *Punic Wars*, 291. Note that the following description of the battle is lengthy but necessary. Each part is designed to demonstrate a different advantage that the maniple formation exhibits. Thus, the path of the frightened elephants (that of least resistance), the disorder of the formation due to the initial fighting, the reformation of the units, and the redeployment of the troops all show the maniple formation's flexibility.

³⁰ Appian, *Appian's Roman History Vol. 1*, Transl. Horace White, (Harvard University Press, 1958): 461-3; Polybius, 301-2.

At the flanks Scipio deployed Masinissa and his Numidian cavalry. The Numidian horses outnumbered the Carthaginian cavalry force, and were tasked with at least holding the Carthaginians and routing them if possible. The Roman and allied cavalry were held in reserve in the rear, ready to advance down the columns. Present at the battle were 23,000 infantry and 5,500 cavalry.³¹

Hannibal formed his elephants in the front. Behind the elephants Hannibal placed his light auxiliaries, Gallic, Balearic and Mauritanian mercenaries and Carthaginians who did not have the armor required to be heavy infantry. Behind the light troops were the phalanx troops, mainly African and Carthaginian with a significant number of Macedonians, who occupied the center. At the rear, after a larger gap, Hannibal placed his crown jewel Italian troops, who were by far the most experienced and capable troops in his army. The Carthaginian cavalry was placed at Hannibal's right flank and the Numidians at his left. All told Hannibal commanded about 35,000 infantry and perhaps 2000 cavalry.³² (See Appendix 8)

At the start of the battle Hannibal – who could not see that the Romans had formed columns of empty space between their maniples because of the *Velites* filling the space between them – ordered the elephants to advance. The Romans responded by banging their swords on their shields, yelling, and making a cacophony of sound, which had the effect of frightening the elephants. Any elephants that did not turn around and run through the

³¹ This was the first battle in the war that Hannibal did not have an advantage in cavalry. Appian, Vol. 1, 465.

³² Hannibal had 80 elephants, the most he had ever commanded. The Numidians who fought for him were commanded by Syphax, a Numidian warlord who was fighting Masinissa in a civil war for control of North Africa. Appian, 467; Livy, *Livy with an English Translation by B.O. Foster Vol. 8*, Transl. B.O. Foster, (Harvard University Press): 491.

Carthaginian lines simply ran down the columns between the maniples and were dispatched at the leisure of the Roman cavalry. The elephants that turned against the Carthaginians scattered their left wing. Masinissa then rushed his cavalry forward and easily routed the remaining cavalry. Laelius³³, the Roman commanding the Numidians on the Carthaginian right, attacked and after a short skirmish also routed the enemy cavalry. Both Masinissa and Laelius drove the enemy from the field and continued chasing them for some distance behind the Carthaginian army.³⁴

Meanwhile, the Roman infantry advanced and drove back the light troops with minimal effort. In their retreat the Carthaginian light troops were resisted by the heavier troops of the second line who hoped to keep their comrades from fleeing, and were thus embattled in the front and the back by friend and foe alike. Eventually the light troops of Hannibal's first line were either killed or were allowed to retreat through the phalanx. In the confusion of battle, however, the Roman *hastati* had broken formation and were beginning to form into a solid mass instead of organized maniple formation.³⁵

Scipio called a halt, and reformed his *hastati* in the middle of the battle.³⁶ After they had reformed Scipio ordered the *Hastati* to advance while dividing the *principes* and *triarii* in half and ordering them around to the flanks of the *Hastati* in order to reform into a phalanx

³³ Laelius held the office of quaestor and was an advisor to Scipio.

³⁴ Livy, Vol. 8, 493; 304-5.

³⁵ Polybius, 304; Livy, Vol. 8, 493.

³⁶ A significant feat, requiring great discipline and training. Adrian Goldsworthy calls Scipio's army at Zama "one of the best trained forces ever produced by the Roman militia system". See Goldsworthy, *Punic Wars*, 303.

formation.³⁷ When the second and third lines had formed on the flanks they advanced as one single unit in the phalanx formation, and met the Carthaginian phalanx. Whether this was a gamble designed for some higher purpose by Scipio or simply a tactical error is up for debate. However, it is clear that the Roman army was at a disadvantage fighting in a phalanx formation against a fresh and highly trained phalanx, who were trained and equipped specifically for battle in that formation (i.e. the Carthaginian phalanx had the long pikes and armor required for phalanx warfare while the Romans had only their short swords, putting them at a range disadvantage). The battle raged on, phalanx fighting phalanx, for some time and it became clear that the only thing holding the Romans in the battle was their great discipline instead of their success on the field.³⁸

The Roman victory was far from inevitable at this point and Polybius suggests that the advantage was in favor of the Carthaginians, who had yet to advance their Italian reserves. Regardless, Masinissa returned with his cavalry and charged the Carthaginian rear, devastating the woefully unprepared infantry. With the cavalry cutting a swath through the army from the rear the Carthaginian phalanx finally broke. Livy claims the Roman casualties at 1500 men and the Carthaginian dead at 20,000 with an equal amount captured. This is an unusually high casualty rate for a victorious army. Most of the killing in ancient battles took place after one of the armies routed. The high casualties attest to the difficult fight at the end, when the Romans were faced against the phalanx.

³⁷ This was a common tactic used by Scipio, though it was used differently at Zama. Scipio often ordered the second and third lines to wheel around the enemy and flank them. At Zama however, he simply placed them in line with the first line and advanced as a phalanx. See Goldsworthy, *Punic Wars*, 296.

³⁸ Livy, Vol. 8, 497-9; Polybius, 305.

Attempting to engage a fresh formation with a tired army organized in a formation for which it was not extensively trained was simply folly. Scipio's army showed when the *Hastati* reformed in battle that it was more than capable of complex manipular maneuvering in the midst of battle. The Romans could have first swapped the fatigued *Hastati* for the far more fresh and experienced *Principes*. Next they could have advanced the *Principes* into the phalanx at intervals, as was standard practice for the legion, and attempted to break up the phalanx. At this point, it would have been a simple matter for the Romans to funnel maniples through the gaps and attack the phalanx from the rear where the phalanx was utterly useless.³⁹ The Romans, under the command of Scipio, had fought the Carthaginians under Hasdrubal Gisco⁴⁰ in the way just described in several battles in the few weeks preceding the Battle of Zama with great success.⁴¹ It is clear that the Roman army in phalanx formation was ineffective against the Carthaginian phalanx. However, it has been demonstrated that the same Roman army in the manipular formation was extremely effective against the enemy phalanx.

Despite the advantage in numbers that the Carthaginians enjoyed over the Romans the armies were essentially evenly matched. The Roman cavalry was successful against their counterparts at the start but this in no way decided the battle. The Roman manipular formation was successful throughout its use in the battle, first allowing the Romans to deploy so as to avoid devastation from the elephants, and later allowing them to rout the first Carthaginian line and reform in the middle of battle. Despite the manipular formation's earlier

³⁹ With all of the pikes facing forwards it was rather difficult for the phalanx to turn around to face the rear without losing cohesion. The maniple, by contrast, could easily about-face or wheel around to face enemies in all directions.

⁴⁰ Not to be confused with Hasdrubal Barca, Hannibal's brother, who died in 207.

⁴¹ Goldsworthy, *Punic Wars*, 293-5.

successes against the phalanx formation it was rejected for the battle against the Carthaginian phalanx in favor of a similar organization, which, but for the return of the cavalry, might well have turned the battle against the Romans. However, the tactical advantages and the flexibility of the manipular formation are evident in the complex maneuvers that were carried out by the army before and during the battle. The Romans and the manipular formation challenged many more phalanxes in the following decades, notably at Magnesia and Pydna, with great success.

BATTLE OF MAGNESIA

Magnesia was an impressive Roman victory in the war against the Seleucid Empire given the disparities in numbers between the two combatants. Shortly after defeating Hannibal the Romans became increasingly involved in Greek politics. The Seleucid Empire, one of the successor kingdoms following the break-up of Alexander's empire, was the most powerful of the Greek states. King Antiochus III (241-187) wanted to advance his already large kingdom across all of Asia Minor and into Greece. Hannibal, who had been banished from Carthage after his defeat at Zama, was taking refuge with Antiochus III as his advisor. Hannibal suggested that Antiochus invade Italy, a land with which he was intimately familiar, instead of Greece because it would cause much more chaos for the Romans. Antiochus chose instead to invade Greece. The Romans decided to intervene after several of their allies requested assistance against the Seleucids.⁴²

⁴² Appian, Vol. 2, 115.

The Romans sent Lucius Cornelius Scipio⁴³ and the fabled Scipio Africanus with an army to stop the Seleucids in Greece and drive them back across Asia Minor.⁴⁴ The two brothers raised their army and set out to Greece, where they won a victory at Thermopylae. Antiochus retreated to Asia Minor and hoped to use his naval supremacy to keep the Romans from landing an army there. However, the Roman navy won a crushing victory at Myonnesus (off the coast of Western Anatolia). Of the ninety ships the Seleucids commanded, twenty-nine of them were sunk or captured against only two of eighty-three for the Romans. With the naval advantage now with the Romans the Scipios quickly landed their army and pursued Antiochus to the field of Magnesia.⁴⁵

The Seleucid kingdom had a history of fielding extremely large armies and the force commanded by Antiochus at Magnesia was no exception. Both Appian and Livy estimate the Seleucid strength at a staggering 70,000 soldiers. The main body of the troops was a Macedonian style phalanx (as was typical of Alexander's successor kingdoms). The Seleucid phalanx used a twenty-one foot sarissa and likely had a polished ornate shield as well. The core of all Seleucid armies were the Macedonian men from military settlements established by Alexander scattered throughout the Seleucid realm. These men were hereditary soldiers,

⁴³ Scipio Africanus' brother, who would gain the title "Asiaticus" after his victory at Magnesia.

⁴⁴ As it was illegal for Africanus to hold another consulship he was assigned as *legate*, or advisor, for his brother. He was given the choice of being the advisor for his brother or for Gaius Laelius, who was the second consul for that year. Africanus decided it would be less disgraceful to be *legate* to his brother than to Laelius, who was *legate* under him during his African campaign.

⁴⁵ Appian, Vol. 2, 155.

trained quite vigorously in phalanx warfare, and thus constituted something like a warrior class in Seleucid society.⁴⁶

The Seleucids emphasized on mounted warfare more than other Hellenistic kingdoms. They generally deployed chariots (despite repeated ineffectiveness in battle), elephants and cavalry. The Seleucid's main focus, however, was in its heavy cavalry, called Cataphracts. These mounted soldiers were very heavily armored and well trained, and were generally under the personal command of the king.⁴⁷

At the start of the battle the Romans deployed their four legions on their left flank, tight up against the river to guard against encirclement. These troops were arranged in the typical three line formation, with the lines overlapping the gaps in the line in front. The Roman infantry numbered around 30,000. On the right was the Roman and Pergamum cavalry, about 3,000 strong, and among these were various light troops and auxiliaries.⁴⁸

The Seleucids formed a typical single line phalanx at their center, with the elite Macedonian soldiers forming the core. These troops were arranged in ten sections fifty men wide and thirty-two men deep. At the end of each section were two elephants equipped in the panoply of war.⁴⁹ Appian says of this formation, "The appearance of the phalanx was like that of a wall, of which the elephants were the towers"⁵⁰. On either side of the Macedonians were

⁴⁶ B. Bar-Kochva, *The Seleucid Army: Organization and Tactics in the Great Campaigns*, (Cambridge University Press, 1977): 54, 56, 72; Livy, Vol. 10, 399; Appian, Vol. 2, 165.

⁴⁷ Bar-Kochva, 73-5, 83-5.

⁴⁸ Livy, Vol. 10, 403-5; Appian, Vol. 2, 163.

⁴⁹ Generally mounted with several men who fought with missiles and arrows while attempting to control the animal.

⁵⁰ Appian, Vol. 2, 165.

other phalanx troops, in the typical single continuous line of soldiers. At each flank the Seleucids placed their heavy cavalry, the right commanded by the king himself, and the left commanded by his son, Seleucus. At the front were placed the scythed chariots and behind these were additional elephants. Just in front of the phalanx the king placed his archers and ranged units.⁵¹ (See Appendix 9)

At the start of the battle, Antiochus ordered the chariots to advance. Eumenes of Pergamum lead the Roman light troops out and encircled the chariots and fired at them with arrows and spears, and drove them back. The horses, retreating in the face of the Roman missiles, dragged the chariots through the Seleucid left flank and scattered the cavalry. Seeing the opening the Roman cavalry surged forward and routed the Seleucid left and continued driving them back to the Seleucid camp. On the Seleucid right Antiochus charged with his heavy cavalry and broke through the opposing Roman legion (Roman left flank), and tried taking the Roman camp.⁵²

The routing legionnaires reformed at the camp gates with the help of a tribune named Lepidus. The maniples were much easier to rally and reform than phalanx troops (phalangites) and it surprised the king that the Romans had so quickly reformed. After reforming the Romans

⁵¹ These archers and other missile fighting troops proved ineffective due to a heavy fog and mist that covered the field. While the Romans' could see their officers just fine (since the maniples each had independent officers, the Seleucid line lost all visibility of their leaders and the bows became useless since the archers could not see the enemy. See Livy, Vol. 10, 409.

Appian, Vol. 2, 165; Livy, Vol. 10, 405-9.

⁵² Appian, Vol. 2, 167-9; Livy, Vol. 10, 411-3; Cassius Dio, *Dio's Roman History Vol. 2*, Transl. Ernest Cary, (Harvard University Press, 1961): 317-9.

managed to drive back the heavy cavalry.⁵³ Accounts of the battle are hazy at best but it seems that the Romans at the camp held the cavalry while those reforming wheeled around to the flanks of the cavalry and, fearing encirclement, the Seleucids broke and fled.⁵⁴

Meanwhile, at the center, the remaining three legions had joined battle with the entrenched and far more numerous phalangites⁵⁵. The phalangites had great discipline and despite them having many maniples infiltrate their line, they held firm, even after the Roman cavalry fell on them from the rear. Finally, the elephants near the Macedonians became frightened and began to flee. This caused great confusion in the Macedonian line and they routed. With the elite Macedonian center broken, the remaining phalangites broke and fled as well.⁵⁶

Again, the Roman maniples proved far more effective than the tactics of their enemies. In this case according to Appian, the Romans killed over 50,000 Seleucid soldiers with a loss of only perhaps 300.⁵⁷ Although they were unable to hold the initial Seleucid Cataphract charge, they were able to reform at their camp and proved flexible and effective enough to both hold the cavalry, and to wheel reformed maniples around to the flank to frighten them. At the Seleucid center the Romans were able to infiltrate numerous maniples behind the phalangites, despite the phalanx's excellent training and discipline. Although it eventually took the Roman

⁵³ Another amazing feat that soldiers bearing short swords were able to turn back a heavy cavalry charge.

⁵⁴ Livy, Vol. 10, 415.

⁵⁵ Sometimes referred to as "hoplites"

⁵⁶ Appian, Vol. 2, 171.

⁵⁷ B. Bar-Kochva estimates these numbers to be quite accurate based on the reliability of Polybius, Livy and Appian. See Bar-Kochva, 171-3; Livy, Vol. 10, 419; Appian, Vol. 2, 175.

cavalry to break the phalanx completely, the infantry were not in the dire situation that they had been against the phalanx at the battle of Zama. Maintaining the maniple formation allowed the Romans to rotate fresh troops to the front line while the Macedonians were forced to continue fighting regardless of how tired they became. It also allowed the Roman battle line to be fluid, keeping the phalanx occupied at the front but not flowing with it if the phalanx got disjointed. Thus, if one section of the Roman line was pushed back, a gap would open farther down the phalanx's line that the Roman maniple reserves could exploit. At the same time, the phalanx could not afford to lose cohesion and thus could not send individual units behind the Roman lines.

The Battle of Magnesia presents another battle in which the maniples proved far more effective than the organization of their enemies, regardless of their enemies' numerical advantage. With the increased staying power afforded to the Romans due to their troop rotating deployment system, and their ability to infiltrate behind the enemy's line as well as fight from any direction, the Roman infantry would likely have routed the phalanx even without the help of the cavalry. The Roman infantry proved effective against cavalry, and against the formidable phalanx, and managed to annihilate an army more than twice its size. This Roman dominance over the phalanx held true for future conflicts, and culminated with the Battle of Pydna.

BATTLE OF PYDNA

The Battle of Pydna was not only a turning point in the Third Macedonian War (171-168) but also marked the end of the Antigonid (Macedonian) kingdom and the beginning of direct Roman control over the Greek peninsula for the first time. After the defeat of Antiochus III at Magnesia, the Seleucids were pushed back over the mountains into eastern Anatolia. While the Seleucid kingdom would persist for several more decades, their former influence among the Mediterranean state system was broken. Rome assumed the position of the dominant power in the region. Although Rome did not officially annex or conquer any lands in the Greek East (until after Pydna), the Romans certainly gained economically through imperialistic domination of the lesser Greek states. To resist the growing Roman influence in Greece, the king of Macedonia, Philip V, began raising money and training troops to fight the Romans for dominance in the Greek peninsula. With Philip's death in 179 his son Perseus continued to prepare for war with Rome, building fortresses, stockpiling supplies at various outposts, and acquiring allies in Greece against the Romans. The Romans feared that Perseus might break the Roman hold on the Greek states and declared war in 171.

The initial battles were indecisive. Polybius claims that the Romans were defeated, but Livy says the battles were simply of undecided outcome.⁵⁸ Whatever the case, neither side seemed to make any progress. The Romans, eager for a victory, reelected Lucius Aemilius Paullus to the office of Consul and immediately assigned him Macedonia as his province.

⁵⁸ Livy is notable for being decidedly pro Roman, and it is likely that he has sugar-coated the early part of the war so as to display the Romans in the best possible light. Whatever the true situation, it is quite clear that neither side claimed any mildly significant victory. See Goldsworthy, *Punic Wars*, 22; Sage, 168. Polybius, 410-412.

Paullus raised his army. Like most Roman armies, this one was very likely composed of a good number of veterans. Soldiers were often discharged after one war only to be sought out and recruited for another.⁵⁹

With his army Paullus sailed to Greece and pursued the Macedonian army to a highly fortified position on a mountain in central Greece. The Macedonians had almost all of the approaches to the position fortified and defended. Paullus sent his son in law Publius Cornelius Scipio Nasica with a small force around the mountain to approach the Macedonians from the rear. Fearing an encirclement Perseus retreated with his army to the plain in front of the town of Pydna, with Paullus and the Romans not far behind. After a day's rest Paullus began to form up the army for battle, but was forced to accelerate the preparations when water gatherers from both armies began to fight each other. More and more units of each army were drawn into battle until eventually both armies were committed.⁶⁰

The Macedonian army was lined up sixteen phalangites deep, each holding a twenty foot long, two handed pike. The first five rows of troops held their pikes straight out in front of them, forming a wall of pikes. Rows six through nine held their pikes slightly slanted upward to deflect missiles and be ready to lower them and step forward should someone in the rows ahead of them fall. The last rows held their pikes straight up, again to deflect missiles. The men of these rows added to the weight of the phalanx, allowing them to hold position or create tremendous force while advancing. With this line, as long as it remained intact, the Macedonians could hold back the Roman legionnaires indefinitely. On the flanks were lightly

⁵⁹ Depending on the likelihood of plunder many citizens may have volunteered for service instead of being drafted. Some citizens spent significant portions of their lives as soldiers and often became officers such as centurions. They were the closest to professional soldiers of the Roman Republican army. See Hoyos, 64.

⁶⁰ Livy, Vol. 13, 225.

armed troops who supported the phalanx by throwing javelins and defending their flanks from attacks.⁶¹

The Romans arrayed their army in the typical *triplex acies*. On the right flank Paullus had several elephants, and cavalry was placed on both wings. The infantry formed the laid brick pattern, with the second line overlapping the gaps between the maniples of the first line, and similarly with the third and second line. There was nothing unusual about the organization of the Roman army except that they had elephants, which were generally not used. The Romans deployed about 25,000 men while the Macedonians fielded almost 45,000.⁶²

The phalanx was on the defensive, and they had placed themselves on even ground on the plain in front of Pydna. Their line stretched over a mile long, and their light infantry and auxiliaries made it even longer. There was little chance that the less numerous Roman troops could flank the Macedonians and, according to Livy “The power of this formation when closed up and bristling with spears extended is irresistible”.⁶³

Paullus’s elephants scattered Perseus’s light troops on the Macedonian right. The Romans closed the distance to the Macedonians, threw their *pila* into the ranks and then charged into the wall of spears. The battle at this point, like most ancient battles, was mainly a shoving match, with the Roman legionnaires ducking behind their tall shields and shoving them against the Macedonian Sarissas and the Macedonians trying to shove them back. Very little if any casualties were inflicted at this point. If the soldiers grew tired the centurions would pull

⁶¹ Anglim, 37.

⁶² Plutarch, “Aemilius Paullus” in *Roman Lives* trans. Robin Waterfield, (Oxford University Press, 1999): 52.

⁶³ Livy, Vol. 13, 229.

them back for a slight respite. However, at Pydna it seems the battle was very quick and likely very few, if any, such respites were necessary.⁶⁴

Because the Romans were organized into maniples, which had gaps between them, several small engagements were fought along the line. The points at which the Romans and the Macedonians were engaged were eventually driven back. The maniples were usually only four to six men deep, and did not have the mass to push back the sixteen man deep phalanx. Therefore the places where there were no Roman maniples remained fairly stationary. Eventually gaps opened up in the phalanx's line. Seeing these gaps Paullus ordered his *Principes* in the second line to advance past the *Hastati* of the first line and, instead of engaging the phalanx that had remained in place, turned ninety degrees either to the right or left, and advanced parallel to the lines behind the advancing portions of the Macedonian phalanx. With the maniple behind them the phalanx was helpless. At about the same time the advancing portions of the phalanx had pushed the Roman *Hastati* onto uneven ground, which either broke up the phalanx enough for the Romans to break through or else allowed the Romans to get under the Sarissas via a ditch in the battlefield.⁶⁵

The disciplined Macedonians held the line even after some of the Roman maniples had infiltrated their line and were attacking them from behind. But when entire portions of the line were either surrounded or wiped out, the phalanx broke and ran. Perseus and his cavalry fled the field when he saw his army waver, and while he was fleeing his army was being slaughtered by the legionnaires. It was said that the "Romans never killed so many Macedonians in any

⁶⁴ Most sources claim the battle lasted no more than 2 hours, a relatively short engagement for the period. By contrast, the Battle of Cannae, which is discussed above, lasted all day, perhaps 8-10 hours; Plutarch, 57.

⁶⁵ Plutarch, 58-9

other single battle".⁶⁶ Indeed over 20,000 were killed, and several thousand captured.

Nightfall saved Perseus's army from complete annihilation but those that survived had done so by tossing their equipment and running. The survivors were tired, frightened and without weapons and armor.⁶⁷

Obviously the Roman maniple proved extremely effective in this engagement as well, considering the Romans lost only about 100 soldiers. Their performance at Pydna demonstrates several more tactical situations that the maniples could take advantage of to win a battle. Behind their large shields the Romans were fairly safe from the pikes of the phalanx and could fight indefinitely.⁶⁸ For the Romans, a disjointed line is not as serious as it is for the phalanx. Because the phalanx was not able to detach smaller units to infiltrate the line, the Romans need not have worried about that. The second and third line made it entirely useless for the enemy to infiltrate the first line anyway, as those lines could simply advance to close the gap. Even the slight gaps that formed in the Macedonian line allowed the Romans to break through and attack from behind. The phalanx only functions if all spears are facing forward. If some have to turn inwards it creates a gap where they were once pointing the pike forward. Thus, if one portion of the line is advanced farther than the other, the line can either defend the gap, or defend their front. Since the soldiers were likely extremely frightened, they chose to defend their front, which allowed the Romans to advance into the gaps. Lastly, while the Roman order of battle could advance around obstacles in the field without losing much if any

⁶⁶ Livy, Vol. 13, 231.

⁶⁷ Plutarch, 59-60; Livy, Vol. 13, 231.

⁶⁸ The Romans also trained with double weighted shields and swords so that in battle their equipment felt very light and this allowed them to fight longer with less rest.

organization and cohesion, the phalanx can only advance across even, flat ground. Once the phalangites pushed the Romans into the ditch, they could not follow and could not defend against the Romans advancing up the ditch under their Sarissas.

Perseus fled with the remaining portion of his army across Greece but was eventually cornered and captured. Lucius Aemilius Paullus paraded him through the streets of Rome in his triumph and gained the cognomen "Macedonicus". With Perseus's defeat the kingdom of Macedonia was dissolved, and its lands and holdings absorbed into Rome's emerging empire. Rome was now indisputably the greatest power in the Mediterranean.⁶⁹

The many tactical abilities and options for deployment and maneuver of the maniples have been shown herein. For each battle it was explained how the unique flexibility and maneuverability greatly aided the Roman victory. It can now be applied to the Battle of Cannae to first explain the defeat and then describe how the battle could have gone differently had the Romans deployed in the maniples formation instead of phalanx. This endeavor will inevitably venture into conjecture but is based on the above described tactical capabilities of the maniples.

ANALYSIS

The implications of the Battle of Cannae were manifold, and its impact is still felt today. However, it was unimaginative tactics that ruined the Roman army more than the brilliance of Hannibal. The simple brute force the Romans used caused their undoing. Certainly they could

⁶⁹ Plutarch, 71.

have waited to fight Hannibal on more favorable ground⁷⁰. The phalanx formation was unwise, especially in the small confines of this battlefield.

Obviously it is easy to conjecture about what could have been done 2000 years after the battle, but it is clearly shown that much of the lessons learned in the Battle of Cannae were applied to the manipular formation of the legion in later battles. It seems unlikely that a Roman army that is twice the size of a Carthaginian army could be defeated, only to have that same Carthaginian army, under the same commander, be defeated by a far smaller Roman army fifteen years later without there being some underlying tactical reason. While Zama was a clash of the two greatest military minds of the time, the battle was not one sided, and the tactics used to win the battle would not have been possible without the manipular formation.

It has been shown that the maniple could be modified to adapt to changing battle situations. At Zama the formations were only slightly shifted, requiring only a few minutes of maneuvering, to allow elephants to pass through the ranks without interfering with the Roman infantry at all. They also showed the capability to be reformed in the midst of battle very quickly due to the small size and independent nature of the unit and its officers. At Zama, the maniples of the *Hastati* reformed during combat and then proceeded to defeat the Carthaginians.

The Romans performed a similar feat at Magnesia. Even in the face of a cavalry charge, the legionnaires were able to reform very quickly, fast enough to startle the Seleucid king and drive back his heavy cavalry. Also at Magnesia the maniple demonstrated its ability to very easily and quickly wheel around to attack an enemy on the flank. While a Greek phalanx or a

⁷⁰ i.e. where their numerical advantage could have been more effectively used.

simple mob of Gauls would have been devastated after being routed by the cavalry, and would never have been able to manage the wheel maneuver to attack the enemy at the flank without much more organization and planning than the Romans needed.

Also at Magnesia the legion showed its superiority against the phalanx itself, infiltrating several maniples behind the line and maintaining order, discipline and calm despite the bristling wall of pikes they faced from the Macedonian and Seleucid phalangites. This is in stark contrast to the phalanx they faced at Zama, when the Romans might have broken if they had not been so well trained and discipline and the cavalry had not returned at the rear, and this was possible because they maintained the manipular formation instead of reverting to the phalanx formation as was done at Zama.

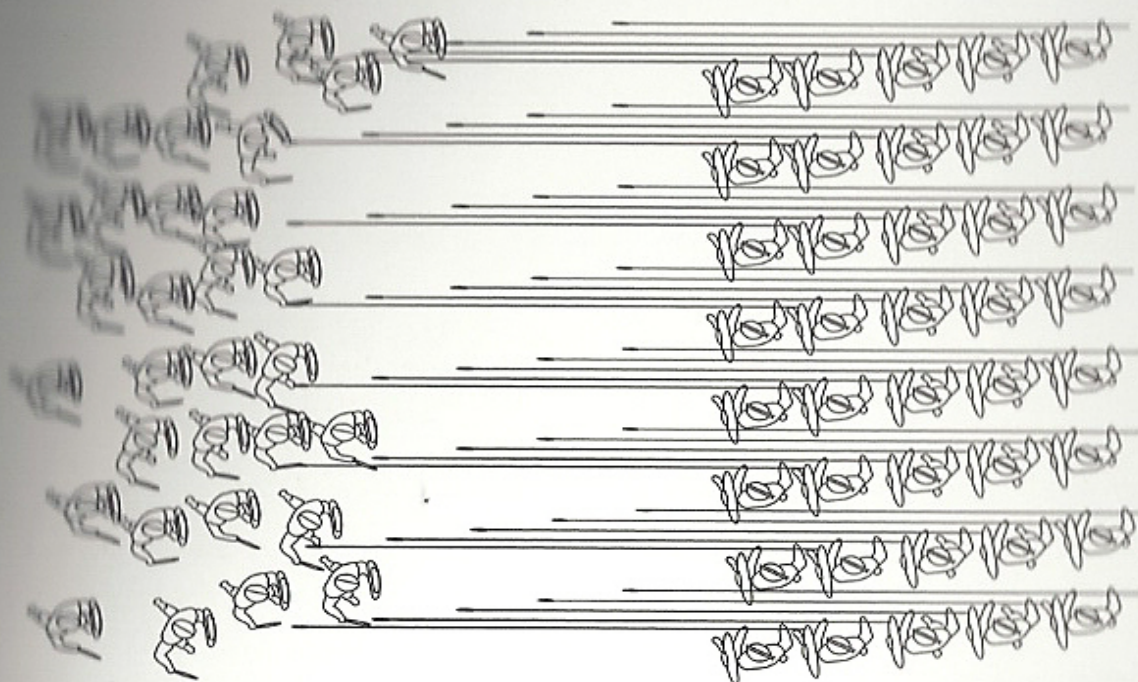
At Pydna it was shown that the maniples could very easily and very quickly infiltrate the phalanx line and attack them from the rear. In less than two hours the Roman maniples had charged the phalanx, been driven back several hundred meters, advanced second line maniples through the phalanx's line, advanced front line maniples into the phalanx's front by getting under the pikes when they reached uneven ground, and routed and slaughtered 20,000 Macedonian soldiers.

The Romans very rarely, if ever, lost a major engagement while deploying the *triplex acies* system with maniple formations. Their major losses occurred while either not deployed at all, as was the case at Trasimene⁷¹, or else deployed in the phalanx formation, as was the case at Tunes (255) and at Cannae (216). With the victories that Roman armies achieved

⁷¹ Trasimene is considered one of the largest and most successful ambushes in military history. Ironically two other very successful ambushes occurred in later Roman history; one in 9 CE, which destroyed another Roman army at the Teutenburg forest and the other in 53 BCE at Carrhae where Crassus and his army met their end. It seems the Romans, though quite apt at winning pitched battles, were also quite susceptible to ambushes

abroad during the Republican any significant resistance, and the only threat to a Roman commander and his army were other Roman armies. It is shown here that the tactical advantages to the manipular formation are manifold and that it was this formation, more so than simple weight of numbers that allowed Rome to conquer the Mediterranean. Against Hannibal those large numbers may have been useful, but had the Romans used the manipular formation at Cannae, they likely would not have been necessary. And having greater numbers of troops at their command proved moot at the battles of Magnesia and Pydna, where the Roman legions were greatly outnumbered and still emerged victorious.

Appendix 1

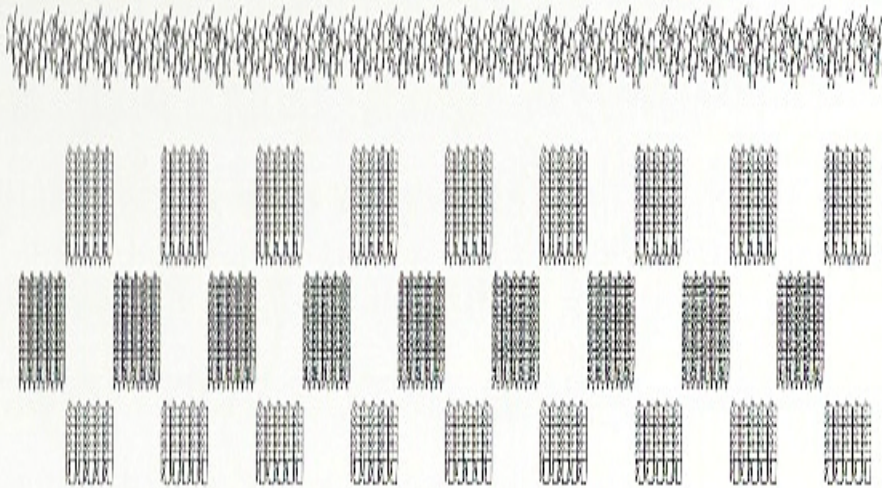


A ROMAN LEGION VERSUS A PHALANX: *the legionaries throw their pila in an attempt to disrupt the phalanx. They then close with the formation, trying to get into hand-to-hand combat range, where the superior sword-fighting skills of the Romans will tell.*

Anglim, Simon, Phyllis G. Jestice, Rob S. Rice, Scott M. Rusch, and John Serrati

Fighting Techniques of the Ancient World: 3000 BC- 500 AD, New York: St Martin's Press, 2002: 49

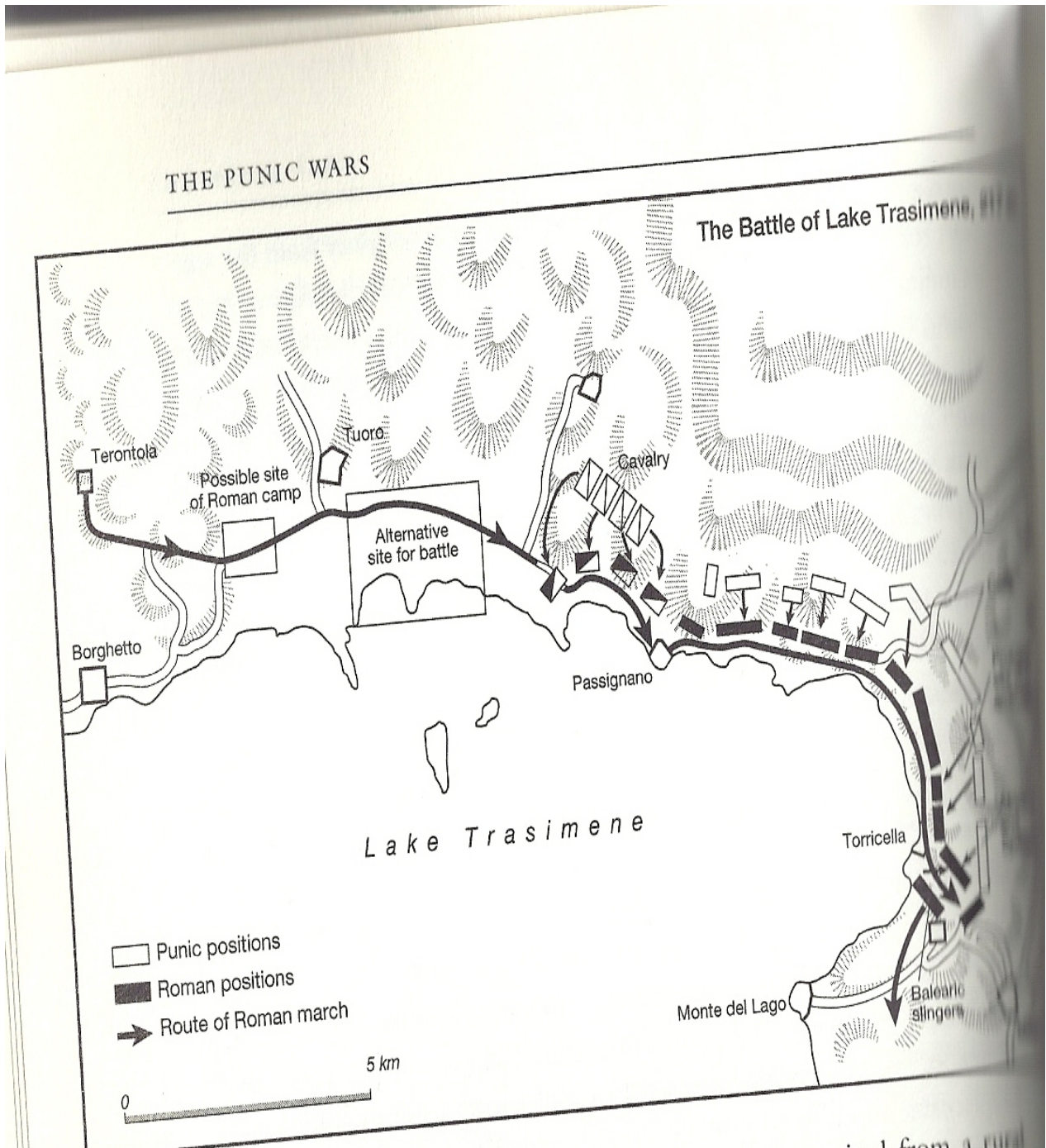
Appendix 2



POLYBIAN LEGION *in marching formation, with the velites in the front rank, and the hastati, principes and triarii following in that order.*

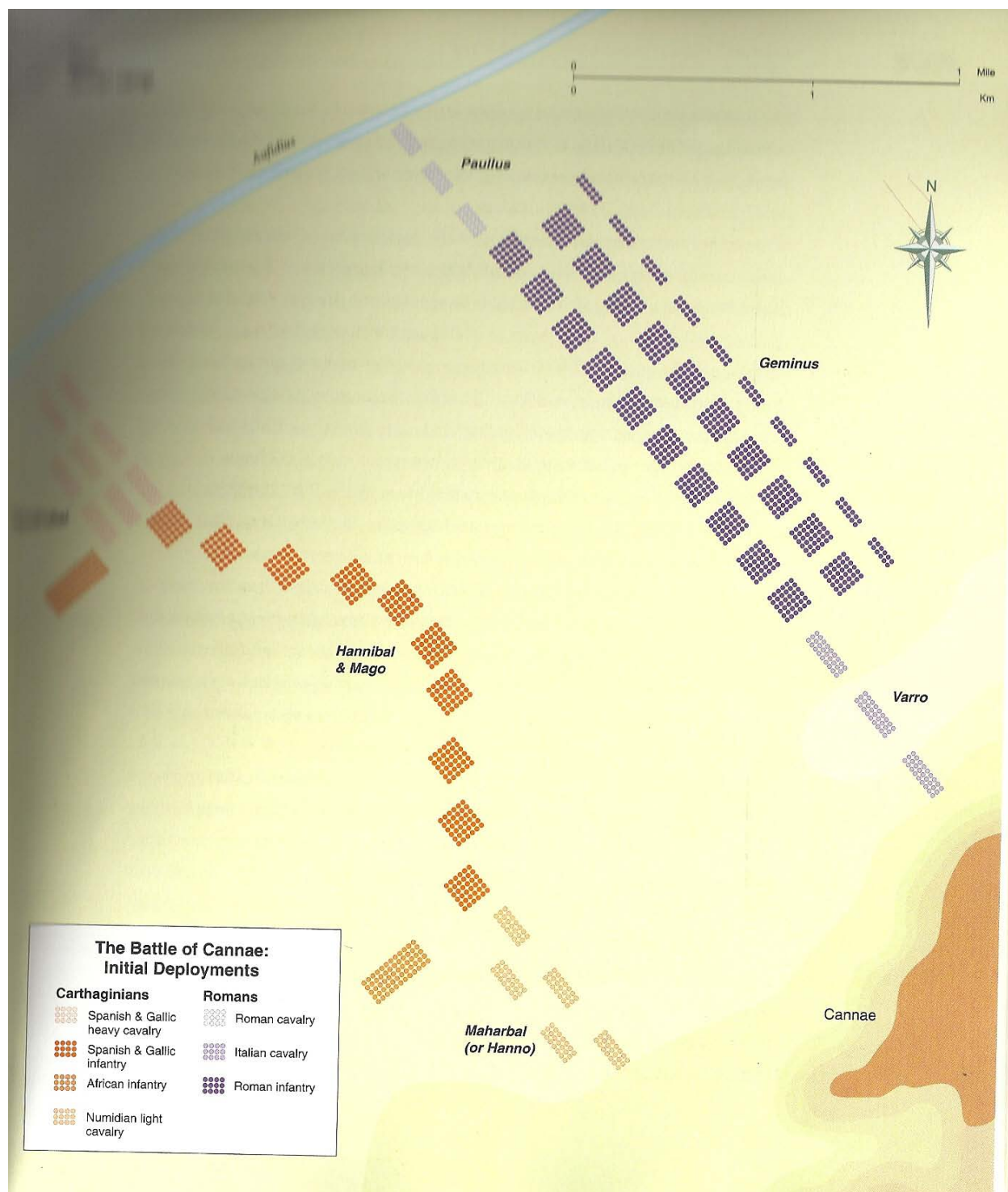
43

Appendix 3

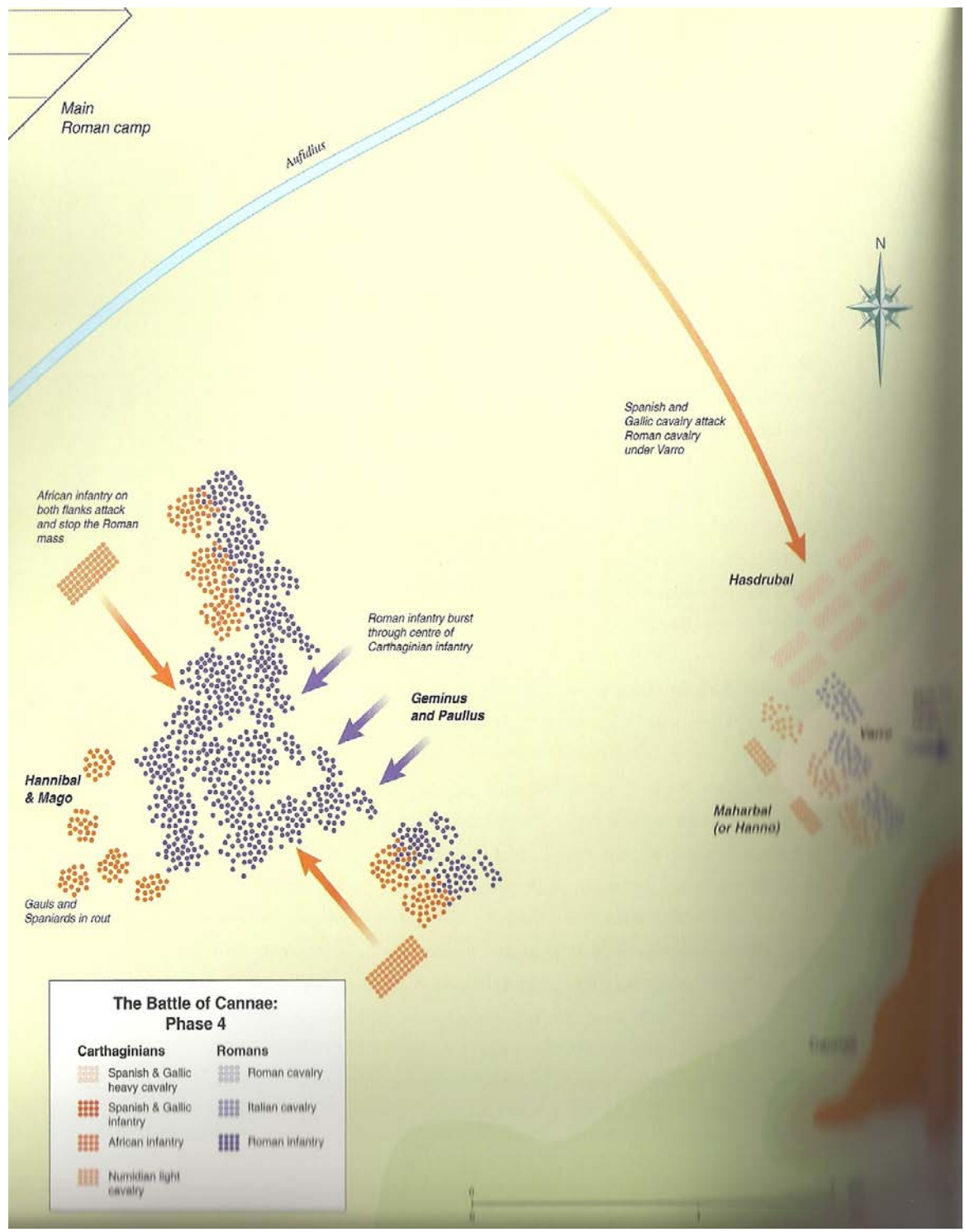


Goldsworthy, Adrian, *The Punic Wars*, London: Cassell, 2000: 186.

Appendix 4

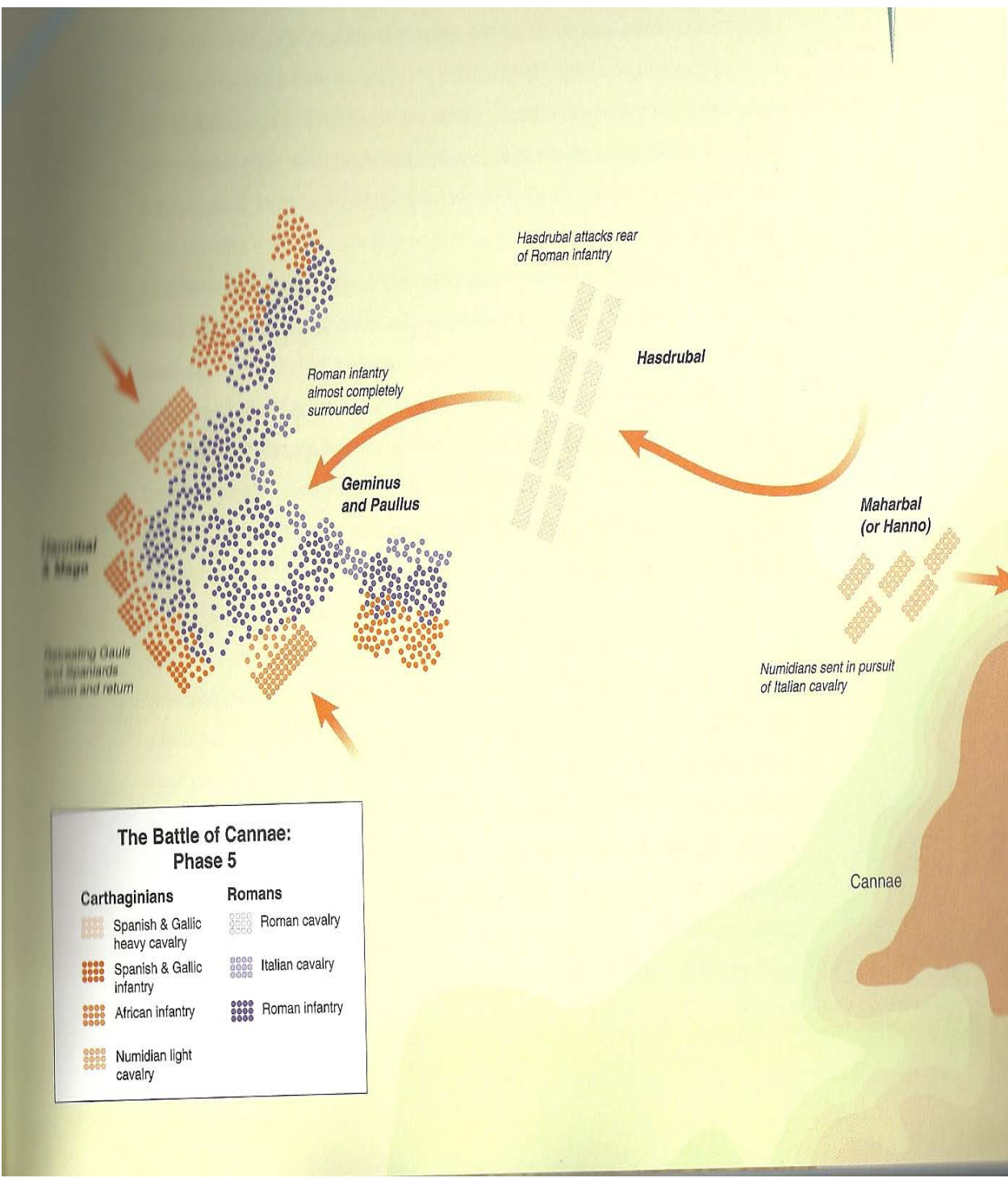


Appendix 5



Goldsworthy, *Cannae*, 146.

Appendix 6



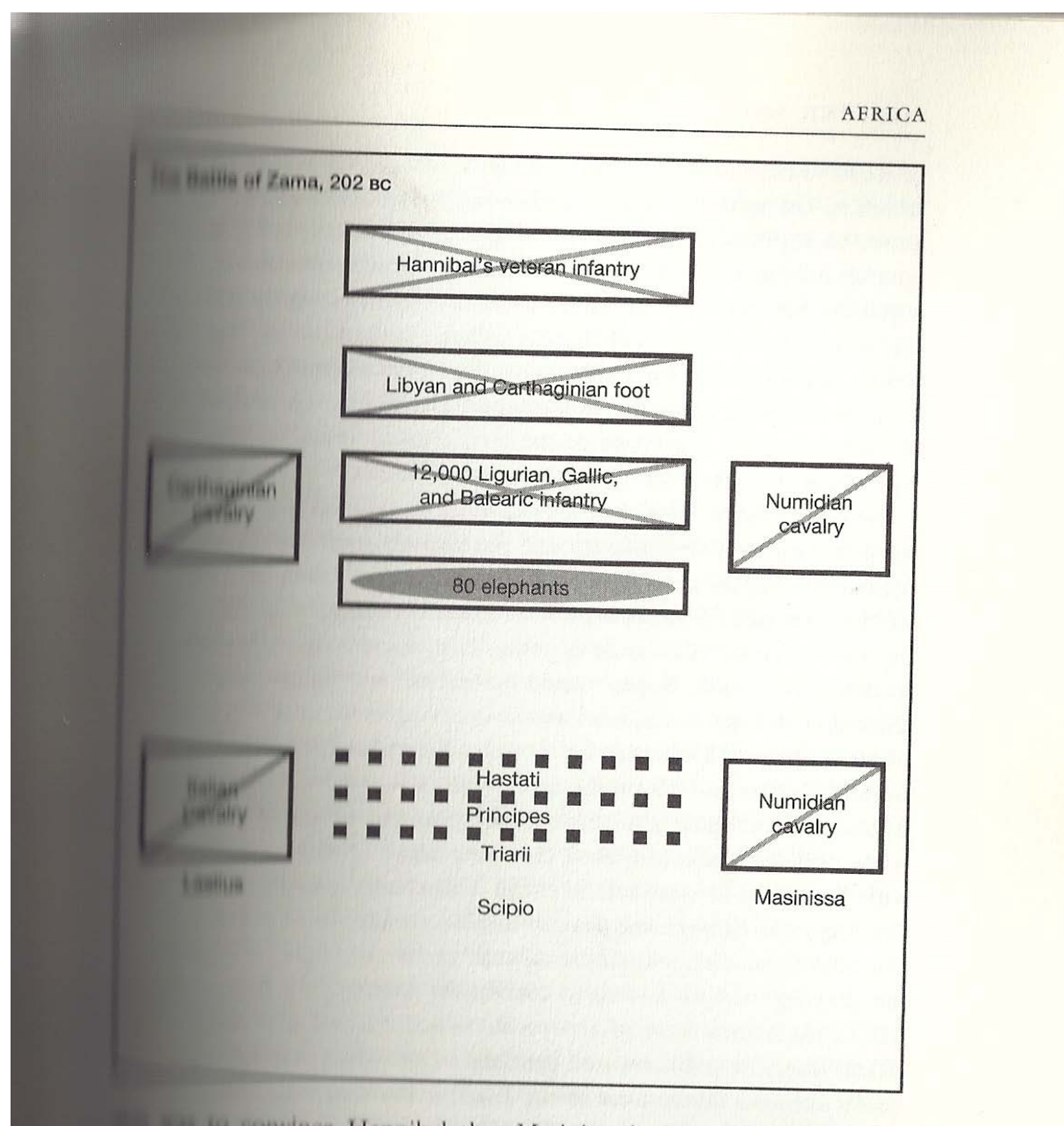
Goldsworthy, *Cannae*, 151.

Appendix 7



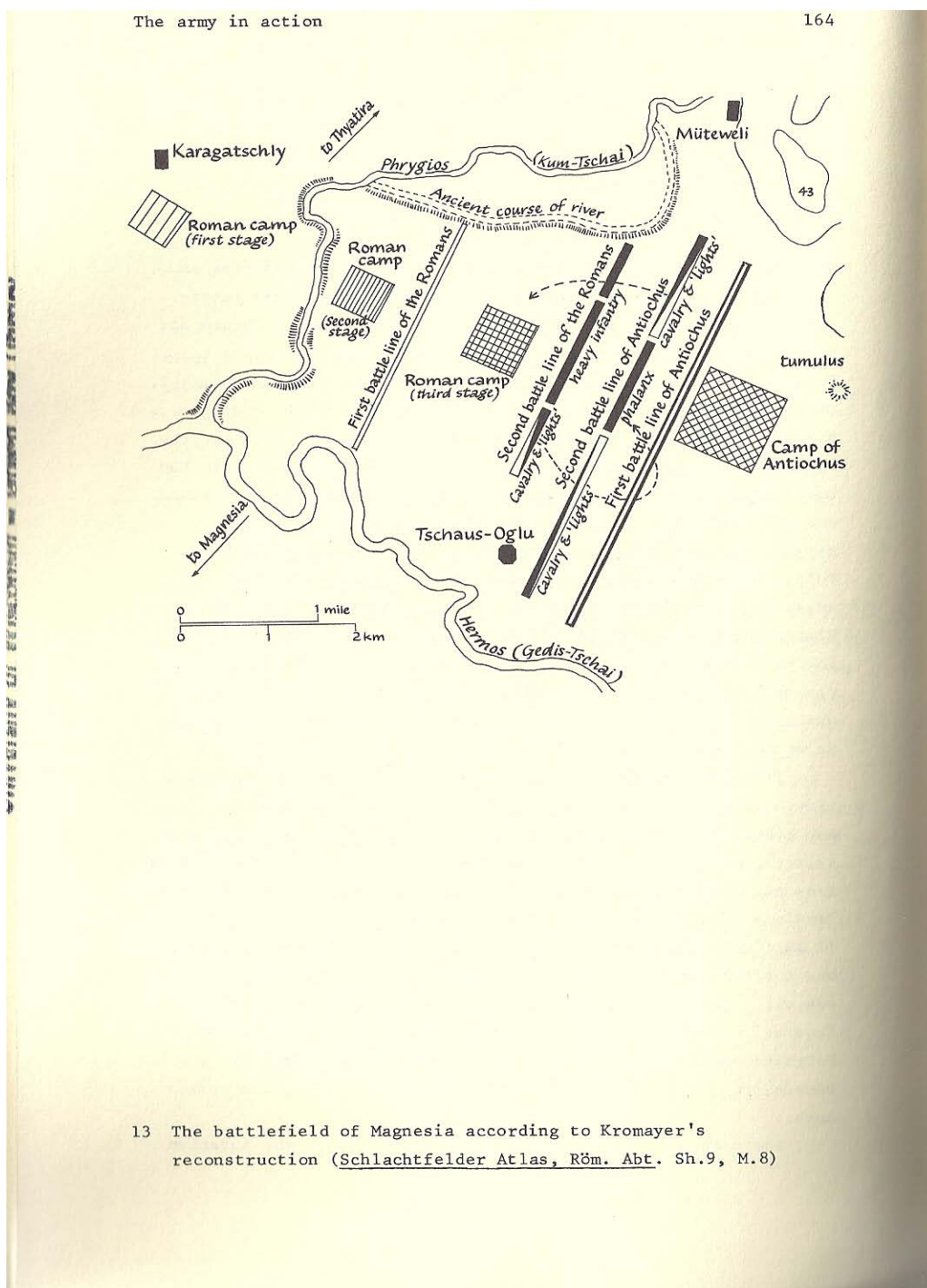
Goldsworthy, *Cannae*, 73.

Appendix 8



Goldsworthy, *Punic Wars*, 301.

Appendix 9



Glossary

Antiochus III (the Great) - (241- 187 BCE) King of the Seleucid Kingdom (r. 223-187 BCE).

Asia Minor (Anatolia) - Roughly modern day Turkey.

Centurions- Officers in Roman legions. Each Maniple was commanded by one front Centurion and one rear Centurion. They are comparable to a Sergeant or Lieutenant in modern militaries.

Cognomen- These are used in Roman naming system to distinguish individuals who have made great achievements, such as great military victories.

Consul- Highest Senatorial Office that a Roman citizen could hold. There were two Consuls elected every year and each held supreme command of an army and the province that they were assigned by the Senate.

Crassus- Marcus Licinius Crassus (115- 53 BCE), was a Roman general and one-third of the 1st Triumvirate (with Caesar and Pompey the Great) that divided up the Roman Empire into three parts. He died in 53 BCE at the Battle of Carrhae against the Parthians (near modern day Armenia/ Turkey)

Echelon- A military formation in which each successive unit is placed slightly forward of the unit to its side, to form a stair step configuration.

Gaius Varro- A Roman general who was Consul in 216 and co-commanded the Roman army at the battle of Cannae.

Gaul- Consists roughly of modern day France.

Hannibal Barca- (248- 183 BCE) A Carthaginian general, who is generally considered to be one of the greatest military minds in history. Hannibal led his army through Iberia (modern Spain) into Italy, where he ransacked Roman lands for over a decade before being recalled to Carthage (In North Africa) to defend against Scipio Africanus.

Lucius Aemilius Paullus- He served as co-Consul with Gaius Varro during the battle of Cannae, where he was killed.

Lucius Aemilius Paullus Macedonicus- (229-160 BCE) He was the son of the above mentioned Paullus. He held the office of Consul twice, the first in 182 BCE and the second in 168 BCE. In 168 BCE he led his army into Greece and defeated the Macedonian army, ending the Third Macedonian War (171- 168 BCE).

Lucius Cornelius Scipio Asiaticus – He was the younger brother of Publius Cornelius Scipio Africanus and was elected as Consul in 190 BCE. He commanded the Roman army at Magnesia and earned the cognomen Asiaticus for his defeat of the Seleucids on that field.

Mauritania- A region of northwestern Africa.

Perseus- (212-166 BCE) Last king of the Antigonid Dynasty (r. 179-168 BCE), who was defeated at the Battle of Pydna in 168.

Phalanx- The phalanx is a military formation of massed heavy infantry widely used in classical and Hellenistic Greece. Soldiers fighting in a phalanx formation (referred to as phalangites) fought with heavy armor and a long pike or spear.

Philip V- (238- 179 BCE) He was Perseus' father and king of the Antigonid Dynasty (r. 221- 179 BCE).

Pila- The Pilum (singular) was a Roman throwing weapon similar to a spear or javelin. It was designed to be thrown and immediately bend on impact so that it would both be unusable by the enemy as well as remain embedded in their shields to add weight and impede their progress. Roman legionnaires during the Republican period generally carried two of these into battle.

Publius Cornelius Scipio Africanus- (235–183 BCE) He is considered one of Rome's greatest generals and served as Consul for several years until his defeat of Hannibal at the Battle of Zama.

Publius Cornelius Scipio Nasica- Was a cousin of Scipio Africanus, and served in Aemilius Paullus Macedonicus's army in 168 at the Battle of Pydna. He later went on to become a respected general in Roman society.

Pyrrhic Victory- This term is named after Pyrrhus of Epirus and refers to a victory that comes at such a high cost of men and resources that it is rendered moot.

Quaestor- Quaestor (pron. *Qu Eh Store*) is a low office that supervised financial and military expenses in Rome.

Samnites- The Samnites were an Italic people in Central Italy who often found themselves at war with Rome, until they were conquered and made into a Roman ally circa 300 BCE. They often found reason to resist Roman rule however, and joined Hannibal during the Second Punic War.

Sarissa- The Sarissa is a pike (roughly 13- 21 ft.) used by phalangites in phalanx warfare.

Seleucus- He was the son of Antiochus III, and king of the Seleucid Dynasty (r. 187- 175). He commanded part of Antiochus' army at Magnesia in 190 BCE.

Successor Kingdoms- This is a blanket term to refer to the various kingdoms that emerged after the death of Alexander the Great in 323 BCE. Since Alexander did not designate an heir, his top generals each claimed their province as a kingdom and thus fragmented Alexander's empire. Antigonus started the kingdom that bore his name in Macedon, Seleucus claimed the East (Persia and Syria), and Ptolemy claimed Egypt. (Note -This is a very basic explanation and that lists only the major actors and glosses the majority of the details).

Teutenburg Forest- Located in modern day Germany. The Roman general Varus led three Roman legions into an ambush by Germans in 9 CE.

Triumph- The practice of holding a triumph, or victory celebration, after a great military victory was important to victorious Roman generals in cultivating their gravitas and popularity. The general often paraded through the streets of Rome displaying the wealth (in the form of gold, slaves, high profile prisoners, etc) they had captured through defeating their enemies in battle.

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An article providing a succinct narrative of, as the title suggests, the Second Punic War. While basically topical, with most of it redundant in Goldsworthy's monograph of similar title noted below, there are several details that are more clearly stated by Briscoe.

Brunt, P.A. *Italian Manpower*. Oxford: Clarendon Press, 1971.

An extensive volume documenting as well as possible the manpower available to the Romans in Italy from 225 BCE to the end of Augustus' life and reign in 14 CE. While much of the volume is superfluous for my research, there are some sections, such as manpower under arms in certain periods, which will be beneficial to the project. It examines not only Roman manpower, but that of the Italian allies as well and delineates them very clearly. Brunt goes beyond the source material for census data in Italy during the time period and adds archeological data and interpretation to create a more realistic view.

De Ligt, Luuk. "Roman Manpower and Recruitment during the Middle Republic" in *A Companion to the Roman Army*, ed. Paul Erdkamp. Oxford: Blackwell Publishing Ltd, 2008 114-131.

Eckstein, Arthur M. *Rome Enters the Greek East: From Anarchy to Hierarchy in the Hellenistic Mediterranean 230-170 BC*. Oxford: Blackwell Publishing, 2008.

Written mainly for Political Scientists interested in a Realistic approach to state systems. It tracks the various intrusions of Roman power into the Hellenistic kingdoms, and interprets the actions of each of the major players involved. Eckstein provides an exceptional compilation of the wide political context leading up to the 3rd Macedonian War as well as a thorough and clear interpretation of the relative power of the political entities involved. It strays, however, from any military/tactical analysis aside from broad relative comparisons of strength. This limits its usefulness in the overall research.

Errington, R. M. "Rome against Philip and Antiochus" in *Rome and the Mediterranean to 133 B.C.* Vol. 8 of *The Cambridge Ancient History*, 2nd Ed. edited by A.E. Astin, et al. Cambridge: Cambridge University Press, 1989.

Another succinct article explaining clearly the situation on the ground leading up to the 2nd Macedonian War, and then the Syrian War. Owing to its relative shortness, the tactical details are glossed but it is very valuable in its clear relation of the source material. It will be beneficial for filling in background of various actors (i.e. generals and lieutenants) that participated in the various battles as well as social and political context.

Flower, Harriet, ed. *Cambridge Companion to The Roman Republic*. Cambridge: Cambridge University Press, 2004.

A comprehensive look at the Roman Republic. This work covers military, political, sociological, and philosophical aspects of the Roman Republic. This will provide an excellent resource for a background to, as well as a look at where the Romans were coming from and why they acted as they did leading up to, the wars being examined.

Goldsworthy, Adrian, *Cannae*. London: Cassell, 2001.

Adrian Goldsworthy's military histories of Republican era Rome are invaluable for my research. This volume clearly relates the relevant primary source data available to paint a likely picture of the situation on the ground before, during and after the battle of Cannae. Its bibliography will be useful for doing independent research and the book itself is a succinct relation of the history.

_____. *The Punic Wars*. London: Cassell, 2000.

Goldsworthy writes very concisely and clearly, and his style is very helpful in his history of the Punic Wars. He carefully breaks down the source material and relates it in a very straightforward and understandable way, without losing its integrity. This work will be invaluable in my analysis of the battle of Zama as well as providing a very comprehensible background to the Second Punic War in general.

_____. *Roman Warfare*, London: Cassell, 2000.

This is another work that describes Roman tactics in general. It tries to cover the entirety of Roman military history, however, and the details are necessarily lacking. Roman Warfare gives a great overview, and provides another great starting point but the detail to make it especially useful in this research is simply not there.

Gruen, Erich S. *The Hellenistic World and the Coming of Rome*. Berkeley: University of California Press, 1984.

This two volume set focuses on the events that took place. It does not focus specifically on the military or political arenas of history but provides a comprehensive view of the period of Roman expansion into the Hellenistic east from the perspective of the Hellenistic side and what Roman Imperialism meant to them. It is valuable in establishing a historiographical context for the period and events I am researching.

Harris, William. *War and Imperialism in Republican Rome 327-70 BC*. Oxford: Clarendon Press, 1979.

This volume is written as an analysis of the period from 327-70 BCE. It analyses why the Romans were so intent on going to war, what their motivations were and what was gained. In the absence of any significant sources from within the senate itself, Harris drew on available sources and interpretations to infer the reasoning. This will be beneficial to my research by providing logical explanations of the motives of the senate which are applied directly to the historical events, especially the wars of the period.

Hammond, N.G.L. "Battle of Pydna". *Journal of Hellenistic Studies*, 104. (1984) 31-47.

As the title suggests this article describes in detail the battle of Pydna. While the primary sources describe this battle in much detail, this article amalgamates the primary source material to make it very comprehensible. Thus it is valuable for getting a clear idea of what happened as well as providing focus for analysis. It also gives references to all relevant primary source material.

Hoyos, Dexter. "The Age of Overseas Expansion (264-146 BC)" in *A Companion to the Roman Army*, ed. Paul Erdkamp 63-79. Oxford: Blackwell Publishing Ltd., 2008.

Markle, Minor. "The Macedonian Sarissa, Spear, and Related Armor" *The American Journal of Archaeology* 81. (1977): 323-339.

This article describes the development and implementation of the Macedonian pike, or Sarissa. This was the preferred weapon of the heavy Macedonian phalanx infantry for the period after Alexander. The article describes its usage in the phalanx formation, its strengths and weaknesses, and the changes in tactics required for its practical implementation. This will be valuable in assessing the effectiveness of the Macedonian infantry in relation to that of the Romans.

Millar, Fergus. *Roman Republic on Political Thought*. Hanover University Press of New England, 2002.

A work on political science as seen by the Roman Republican political leaders. Fergus seems to be examining the political history of Europe through its connection, or lack thereof, with the Roman Republican political system and ideals. An excellent source for getting a clear view of politics in the Roman Republic but not entirely relevant to warfare or tactics.

Mouritsen, Henrik. *Plebs and Politics in the late Roman Republic*, Cambridge: Cambridge University Press, 2001.

Mouritsen argues that the plebian population had much less power in Roman politics than is usually thought. While some believe that, since the Roman people had the potential for great power, at least in written law and constitution, in actuality they had very little real power. This provides background to the running of the state as well as showing that Roman politics were controlled by the elite much more than by the poor and thus any decision for war making would be more as a result of those elite citizens than by general war mongering in the city.

Pritchett, W.K. *The Greek State at War* Berkeley & Los Angeles: University of California Press, 1991.

This book examines the evolution of warfare as practiced by the Greeks. It begins with early Greeks, and moves through the classical period and the war between Sparta and Athens, and eventually examines Alexander's army and battle tactics. The Hellenistic kingdoms that Rome conquered modeled their militaries directly from Alexander's army and as such this work helps in the understanding of the armies of the enemies of Rome.

Rawlings, Louis. "Army and Battle during the Conquest of Italy" in *A companion to the Roman Army*, ed. Paul Erdkamp 45-63. Oxford: Blackwell Publishing Ltd., 2008.

Rich, J. "Fear, Greed and Glory: The Causes of Roman war making in the middle Republic". *War and Society in the Roman World*. edited by J. Roth and G. Shipley, 1993, 38-68.

An article describing, as the title suggests, why the Romans went to war during the period I am researching. Rich argues that Fear (i.e. concern for the city itself), Greed (the desire for plunder from conquest), and Glory (the fame gained for a politician for commanding a victory in battle) were the causes of all wars the Rome prosecuted.

Roth, J.P. *The Logistics of the Roman army at war (264 BC- AD 235)*. Boston: Brill, 1999.

This monologue examines just what it took to march a Roman army into battle during various periods in the Roman period. It analyses the pay of the legionnaires, the supply of the army at home and abroad, and the support structures and military infrastructure needed to keep the armies feed and equipped and ready for battle at various campaigns. This will be an excellent source for knowing how well equipped the Roman army was at various battles and how they received the supplies at that time.

Sabin, Philip. "The Face of Roman Battle". *The Journal of Roman Studies* 90, (Jan. 1 2000): 1-17.

This article describes some of the tactics used by Roman armies in the mid to late Republic. Because of the flexibility of the manipular arrangement of the legions, Sabin argues that the tactical possibilities are multiplied many fold over that of the phalanx formation. He introduces these tactics in the article, and clearly gives the reader a picture of the tactical advantages the legions enjoyed.

Sage, Michael M. *The Republican Roman Army: A Sourcebook*. New York: Routledge, 2008.

Shelton, Jo-Ann. *As the Romans Did: A sourcebook in Roman Social History, Second Edition*. Oxford: Oxford University Press, 1998.

This work provides another broad view of Roman history, but also provides specific sources to provide contemporary supporting evidence for the assertions made. Several of the sources will be useful for the research, and the book provides insights into the social history of Rome, which will allow for analysis of the view on the home front while analyzing the wars and tactics.

Shipley, G. *The Greek World after Alexander, 323-30 BC*. London: Routledge, 2000.

This book explores the transformations and continuities in the Greek world after the death of Alexander. An excellent source to uncover the situation in both the Seleucid and Antigonid states leading up to and after the wars I am examining.

Zhmodikov, Alexander. "Roman Republican Heavy Infantrymen in Battle (IV-II Centuries B.C.)." *Historia: Zeitschrift für Alte Geschichte* 49 (1st Qtr. 2000): 67-78.

This article describes the likely experiences of an infantryman in the Roman army. It peels apart the accounts of the ancient authors, mainly Livy who tended to describe Republican Roman tactics with language and terms of Caesarian period tactics, to give the reader a fairly clear idea of how battles were fought and won as well as what the ancient soldier would have experienced in those battles.

Primary Sources

Appian. *Appian's Roman History*, Trans. Horace White. Cambridge: Harvard University Press, 1958.

Cassius Dio. *Dio's Roman History*. Trans. Ernest Cary, Cambridge: Harvard University Press, 1961.

Livy. *Livy with an English Translation by B.O. Foster*. Trans. B.O. Foster. Cambridge: Harvard University Press, 1951-61.

Polybius. *On Roman Imperialism*. Trans. Evelyn S. Shuckburgh. South Bend, Indiana: Regnery/Gateway, Inc., 1982.

Plutarch. *Roman Lives*. Trans. Robin Waterfield. Oxford: Oxford University Press, 1999.