

**NECESSARY CHANGE: THE NEED FOR SURVIVAL AS A  
PERSPECTIVE OF ROMAN MILITARY ADAPTATION**

**by**

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## **Abstract**

This thesis aims to provide a new perspective on the change in the Roman military, mainly with respect to equipment and tactics. Instead of looking at change in the Roman military from the perspective of Roman expansionism, which focuses on how military changes enabled Rome to expand, it is more accurate to regard Roman military change as arising out of Rome's need to adapt in order to survive. Through a continuous cycle of defensive wars starting with the three Samnite Wars, Rome changed its military by adapting ideas and techniques of its enemies. Adaptations of the Roman military came in several forms, including weaponry and armour, tactics, training, and fortification. These adaptations, once put into action, led to Roman victory and expansion by way of military defeat of hostile enemy forces. Since the beginning of the Samnite wars in the middle Republic, Rome was caught in a continuous series of conflicts, almost all of which threatened Rome and its interests. The defensive wars that followed not only provided safety for Rome and its people, but increased the territory under Roman control due to military superiority. Following the establishment of the Pax Romana, little innovation occurred in Rome's military structure until the reintroduction of defensive wars during the crisis of the third century. Following reintroduction of defensive wars, the Roman military, through adaptation, began to resemble the barbarian forces they fought against, eventually changing into the Byzantine Medieval army.

## Introduction

In the last century, scholars have shown a rising interest in the political and military nature of Roman expansion. Scholars such as Edward Luttwak argue that there was an underlying imperialist element in Roman grand military strategy starting in the mid-Republic.<sup>1</sup> A military strategist, political scientist, and historian, Luttwak has a more imperialist view that explains the expansion of the ancient Roman state. He credits imperialistic design for territorial gain and acquisition of wealth as the main driving factor in Rome's continuous military campaigns since the Samnite Wars of the fourth century BCE. This paper argues a different perspective of Roman expansion in accordance with the theories of Theodor Mommsen; that it was not imperialist designs, but rather the threatened survival of Rome that caused military adaptation of the Roman civilization, which in turn caused it to expand.<sup>2</sup> Considered one of the greatest classicists of the nineteenth century, Mommsen's work in the field of Roman history, specifically the late Republic, pioneered theories that challenge the imperialistic notions of Roman expansion. The threat to Rome's survival by hostile people thrust the city into a continuous cycle of defensive wars, where the Roman army, out of necessity, was forced to adapt to hostile warfare techniques. Military adaptations allowed Rome to overcome hostile forces, and expand as a by-product. Once defensive wars became less frequent, adaptation of the military stopped and so did expansion. When defensive wars resumed later in Roman history, adaptation

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<sup>1</sup> Edward Luttwak, *The Grand Strategy of the Roman Empire: From the First Century A.D. to the Third* (Baltimore: JHU Press, 1979), 23.

<sup>2</sup> Theodor Mommsen, *Rome, From Earliest Times to 44 B.C.* (Cambridge: J.D. Morris, 1906), 46.

resumed, but as a way to slow the collapse of the Roman Empire, with no further expansion taking place.

The argument is presented diachronically in three chapters covering the entire military history of the Roman civilization from 753 BCE until 611 CE. Chapter one examines the Regal and early Republican periods of Rome (753 - 241 BCE) with the adoption of Etrusco-Greek methods of war and the breakaway from that adoption through adaptation by way of the first defensive wars.

Chapter two focuses on the stagnation of the late Republican and early Imperial periods (107 BCE- 197 CE). After the Marian reforms of 107 BCE, the lack of defensive wars halted the adaptation of the Roman military and the rapid expansion of the Roman state, and degraded the quality of the army over time.

Chapter three looks at how defensive wars resumed in the later Roman Empire, and how the Roman army in this period adapted into a different form compared to the army of the early Empire. It continues with the new form of the army in the Eastern Roman Empire after the collapse of the Western Roman Empire. A new series of defensive wars eventually caused the army to adapt and become the Medieval Byzantine army.



## Chapter One

Roman military supremacy throughout the Mediterranean in the Republican period was a result of continuous adaptation through defensive wars where the survival of Rome was threatened. This necessity for survival began with the expulsion of the last king of Rome, Tarquinius Superbus c. 509 BCE and came to fruition at the onset of the Samnite Wars c. 343 BCE. The Roman military prior to the Samnite wars adopted an Etrusco-Greek style of warfare using the phalanx formation. In Rome there is stone paving dating to c. 625 BCE., revealing the first signs of an urbanized society along the banks of the Tiber river. Given that the primary sources date the founding of the city of Rome at 753 BCE, modern archaeologists argue that 'Rome' was a series of interconnected villages spread across seven hills during this period. The archaeological date of the paving corresponds with literary evidence of the last three kings of Rome, who are believed to be Etruscan. The evidence, therefore, points not to an independent Roman kingdom starting from 753 BCE, but the absorption of loose villages into a new Etruscan city-state no later than c. 625 BCE. With the Etruscans themselves influenced by the Greeks who came to settle the southern Italian peninsula, the Etruscans would in turn influence Rome in all societal aspects, including war. Beginning from 625 BCE to 327 BCE, analysis of archaeological evidence of armor, weaponry and literary evidence of tactical deployment points to the military of Regal and early Republican Rome as being an adoption of Etrusco-Greek equipment and practices. After c. 327 BCE, there was a breakaway from that Etrusco-Greek style of warfare in the Roman military. Through a continuous cycle of defensive wars starting with the three Samnite Wars (343-290 BCE), Rome adapted its military using ideas and techniques taken from their enemies. The maniple, its organization, and equipment, was the first major adaptation of the Roman military and

was developed out of the Samnite Wars. The purpose of these defensive wars was the survival of Rome. It was the necessity for survival that drove this cycle of adaptation throughout the Republic until the Marian reforms (c. 107 BCE) and the establishment of the Empire (c. 27 BCE).

#### **A. Greek Influence on the Etruscan Origins of Roman Military Evolution**

Roman weaponry and armor, as well as tactics, of the Regal and early republican periods were influenced by the Etruscans, who in turn were influenced by Greek and Gallic practices. This was due to their extensive trading throughout the Italian peninsula and beyond. Situated in central Italy, Rome was connected by trade routes to the two major powers of the Italian mainland at the time: the city-state Etruscan confederation to the north and the Greek colonies of Magna Grecia of the southern coasts. The Greek presence and power base in Italy influenced Etruscan society in weaponry, armor, and tactics, which they in turn passed on to the Romans, who were situated near Etruria and 16km from the Etruscan city of Veii. In the *History of Rome*, Livy attests to this power-base: “So great was the power of Etruria that the renown of her people had filled not only the inland parts of Italy but also the coastal districts along the whole length of the land from the Alps to the Straits of Messina”.<sup>3</sup> Archaeological findings confirm Livy’s description of the Etruscans. Bettina Arnold, discussing the extent of trading between Iron Age societies, finds that contact between Etruria and other communities, even beyond the Alps, existed as early as the 9th century BCE, with Etruscan imports of weapons, armor, *fibulae*, drinking vessels, and various pottery found at Celtic sites north of the Alps. One of the trade routes used by the Etruscans brought them to the Greek colony of Massilia

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<sup>3</sup> Titus Livius, *The History of Rome* (London: J.M. Dent & Sons LTD, 1905), 1.2.5.

(modern Marseilles) where studies of archaeological remains indicate that between 575 and 550 BCE, 57% of the wares found in Massilia were Etruscan, while 16% were Greek, and 27% were from Massilia.<sup>4</sup>

### **I. Archaeological Evidence**

By way of this extensive network of trade it is argued that the Etruscans experienced a cultural influx back upon themselves, bringing foreign ideas in contact with their own. This can clearly be seen in the Etruscan military, which iconographic and archaeological evidence clearly indicates was modeled after Greek hoplite warfare. A statuette (dated to c. 500 BCE) found in the modern province of Viterbo, Italy, where the Etruscan city of Tarquinia was located, shows an Etruscan warrior standing with a circular concave shield in his left hand, his right hand in the upward grasping position holding a spear or javelin. Carved contour lines along the neck, chest, and leg areas imitate his armor: possibly a coat of mail or muscle cuirass around the chest and back area, greaves covering his lower legs up until the knees and a very elongated type of helmet with an open face and what look like cheek guards.

### **II. Armor**

Extensive archeological findings provide evidence of noticeable similarities between Etruscan helmets and other body armor employed during this period of acquisition by Etruscans and Romans and those of contemporary Greeks. The Etruscan helmet worn by the Viterbo statuette warrior is aesthetically very similar to both the Chalcidian helmet of northern Greece with its distinct nose guard, accented brow and more open face. It is also similar to the non-Greek Phrygian, or Thracian

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<sup>4</sup>Bettina Arnold, *Iron Age Germany in Ancient Europe 8000 B.C. - A.D. 1000* (New York: Charles Scribner's Sons, 2004), 256.

style helmet, which has the dome of the helmet elongated vertically into a kind of curl. Both these styles are similar to Etruscan examples.<sup>5</sup> Another style of helmet widely used in Italy but not specifically Etruscan, which has its roots in Greece, is the Apulo-Corinthian helmet, named after the south-east area of the Italian mainland where most of the artifacts have been found. It was adapted from the Corinthian style helmet of Archaic Greece made from bronze, with early versions having an enclosed face with a nose-guard and two vertical slits to act as a visor for sight. The Apulo-Corinthian style had the neck widened and the visor shortened to give the wearer the ability to pull the helmet up so it rested on his head, even as he fought.<sup>6</sup>

Two final examples of helmet variations used by the Etruscans are the Pilos and Montefortino types. The Pilos style was also developed in Greece during the fifth century from a type of felt hat worn casually around the head and was employed during the Peloponnesian War and introduced into Italy no later than 404 BCE at the conclusion of the war. It was made from bronze into a simple conical egg shape sporting a horizontal border, having two open slits to fasten a strap in order to keep it securely on the head of the fighter in combat and to help carry it in marching formation.<sup>7</sup> A likeness can be seen between this type of helmet and the Etruscan Negau types, which employ a similar, but flattened, egg shape sporting a ridge on the

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<sup>5</sup> Peter Connolly, *Greece and Rome at War* (London: Greenhill Books, 1998), 34.

<sup>6</sup> David Ridgeway, *Italy before the Romans: The Iron Age, Orientalizing, and Etruscan Periods* (The University of Michigan: Academic Press, 1979), 97.

<sup>7</sup> Connolly, *Greece at Rome at war*, 37.

dome going front to back.<sup>8</sup> The Montefortino style is named after the region in Italy where it was first found. Unlike the previous types, this one is of Gallic origin, and was adopted by the Etruscans in the early fourth century, spreading southward. It is a plain, cap-shaped design with a minor neck guard and central knob on the top of the dome and fasteners for cheek guards which at this time were made primarily from leather.<sup>9</sup>

Looking at the homogenization of Roman armor and weaponry in Italy around this time, scholars identify dispersal patterns of these types of helmets, giving a perspective on where they were most popular within the Italian peninsula. Helmets similar to the Pilos and Apulo-Corinthian were used predominantly in the southern parts of Italy while the Montefortino was seen as originating from the north.<sup>10</sup> The reliefs of a rock cut-out tomb located in the necropolis of Banitaccia near modern Cerveteri, known as *the Tomb of the Reliefs*, provides an excellent example of Etruscan weaponry and armor used during this time. The reliefs show series of Montefortino helmets with its identifiable knob on the dome, along with a Phrygian helmet adorned in the back-central display. The presence of these Greek style helmets in an Etruscan tomb means that the Etruscans practiced, or at least were aware of, Greek warfare practices.

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<sup>8</sup> Sidney M. Goldstein, *An Etruscan Helmet in the McDaniel Collection* (Harvard Studies in Classical Philology: Harvard University, 1968), 384.

<sup>9</sup> Connolly, 66.

<sup>10</sup> Michael Burns, *The Homogenization of Military Equipment Under the Roman Republic* (London: Institute of Archaeology, 2005), 71.

### III. Weaponry

Also in the tomb of the reliefs, alongside the Montefortino helmets, are stucco reliefs of carved rounded shields, greaves, cuirasses (possibly muscled), below which are various swords, as well as a variety of other weapons including spears and axes. Concerning weaponry, just as the evidence indicates that the Etruscans adopted the Greek phalanx in battle, so too do we find that the Etruscans employed Greek weaponry. The standard weapon used in a Greek phalanx was the dory spear, the same used in the early Roman phalanx, and called a *hasta* in Latin. It was about three meters in length and had a sharpened bronze or iron point at the end which was used both to keep the enemy at a distance in certain disadvantageous positions and to provide a usable reach of lethality after trampling the enemy phalanx. It was held with just the right hand, leaving the left hand to hold the shield up in the phalanx position.<sup>11</sup> Swords took a secondary role in the phalanx formation, but two types of swords are known to have been used by Greek warriors of the phalanx for close quarters combat when the dory had been discarded or destroyed. The first is the *xiphos*, a double edged iron straight-sword roughly 50-60 cm, famously depicted on a vase painting of Actaeon being attacked by his hounds. The other type of sword is the *kopis*, a single edged blade ranging from 48 cm to 65 cm in length, and while being used in the phalanx, it serves a double purpose as an effective cavalry weapon with its single edge.<sup>12</sup> In the Tomb of the Reliefs, the *kopis* sword is identified on the left

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<sup>11</sup> Jeffrey A. Becker, *The Tomb of the Reliefs*, Last modified 07/15/15

<https://www.khanacademy.org/humanities/ancient-art-civilizations/etruscan/a/tomb-of-the-reliefs>.

<sup>12</sup> Xenophon, *On Horsemanship* (London: Macmillan and Co., 1897), 18.

pillar facing in from the entrance with a single edge. On the back-central relief there is a dory spear leaning on the right side with a definitive point at the end.<sup>13</sup> The quality of both the weaponry and armor involved in an Etrusco-Greek phalanx would depend on the wealth and subsequent social standing of individual citizens.

#### **IV. Formation of the Phalanx in the Etrusco-Greek Polis**

The Greek phalanx formation was one based on the socio-economic status of the typical Greek *polis* or city-state. Namely, citizens supplied their own equipment at their own cost, and the quality of their equipment would vary upon their social standing. Phalanx formations of the Etruscans follow the same pattern. Chalcidian, Phargian and Apulo-Corinthian helmets were only available to those upper-class citizens who could afford such armaments; the same for bronze or brass cuirasses, greaves and shields. Lower-class citizens with less income would have worn helmets like the Pilos or Negua types, due to their simplicity and low cost, and would have been outfitted with less expensive armor like leather made cuirasses instead of bronze. In the writings of Livy there are descriptions of these kinds of equipment and how the phalanx was organized in Roman society.

#### **V. Literary Evidence**

The extent of Etruscan influence on Roman weapons, armor and tactics can be ascertained by a critical analysis of the literary account of the last three kings of Rome, the Tarquin Dynasty. Livy tells of a man named Lucomo, who was half Greek and half Etruscan. Fleeing Tarquinia, one of the twelve city-states of the Etruscan confederation, after the people there did not accept him as one of their own, he came to Rome. Once settled in the city, he made himself known to the king Marcius Ancus

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<sup>13</sup> Becker, *The Tombs of the Reliefs*.

and changed his name to Lucius Tarquinius Priscus: “They announced his name as Lucius Tarquinius Priscus...[and] he soon succeeded by adroit complaisance in getting on to such familiar terms that he was consulted in matters of state, as much as in private matters, whether they referred to either peace or war”.<sup>14</sup> His influence enabled him to be appointed guardian of the children of king Ancus Marcius. After Marcius had died, Priscus sent the sons of Marcius on a hunting expedition while he gave a rousing speech to the Senate listing reasons why he should be elected king of Rome: he had the adequate experience in state matters, he had learned every Roman law and ceremonial custom and he was the right hand of the former king. The Senate, enraptured by his speech, elected him king c. 616 BCE.<sup>15</sup> Generally accepting that there was a heavy Etruscan presence in Rome during this period, scholars question the accuracy and validity of Livy’s account that the Etruscan dynasty had been established in Rome: “Etruscan domination at Rome did not take the form of a single, continuous, and firmly established dynasty. A series of Etruscan chiefs, Tarchu, Mastarna, and Porsenna... representing successive waves of invasion, had in turn usurped the throne without being able to perpetuate their sway or found genuine dynasties”.<sup>16</sup> Although the accuracy of Livy’s history has been put into doubt, the overall lack of any literary sources from, or concerning, the period in question means that his account must be used, but supplemented by archeological findings to paint a more realistic picture of the Roman Kingdom. The Etruscan chief Mastarna is now

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<sup>14</sup> Livy, *The History of Rome*, 1.34.1.

<sup>15</sup> Livy, 1.35.1.

<sup>16</sup> Leon Homo, *Primitive Italy and the Beginnings of Roman Imperialism* (New York: Routledge, 1996), 91.



believed to be the true name of Servius Tullius, who in the accounts by both Livy and Dionysius of Halicarnassus was related to neither Priscus or Tarquinius Superbus, and also instituted the most political and militaristic changes in Rome of the three.

Scholars now agree that there was a heavy Etruscan influence in Rome at this time.

According to Livy, the Servian reforms included the first Roman census, which he used to classify the Roman populous into five distinct economic classes or centuries, each with a military function and varying equipment within the phalanx and divided into seniors and juniors, with the former defending the city while the latter went out on military campaigns: “By its means the various duties of peace and war might be assigned, not as heretofore, indiscriminately, but in proportion to the property each man possessed”.<sup>17</sup> Formally, the army established by Romulus had consisted of 3000 infantry with 300 cavalry on its flanks, drawn from the thirty curiae which fought in no particular formation.<sup>18</sup> The literary evidence of the army established by Romulus, indicated a fighting style similar to tribes in Gaul and Germania, a style that was dropped in favour of a significantly better one, the phalanx. Those whose wealth exceeded 100 000 lbs of copper were formed into eighty centuries and called the first class, whose armor: “Which they were to provide themselves... comprised a helmet, round shield, greaves, and coat of mail, all of brass; these were to protect the person. Their offensive weapons were spear and sword”.<sup>19</sup> Those whose wealth was between 75 000 and 100 000 lbs formed the second class of twenty centuries, which was

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<sup>17</sup> Livy, 1.42.5.

<sup>18</sup> Graham Shipley (ed.), *The Cambridge Dictionary of Classical Civilization* (New York: Cambridge University Press, 2008), 81.

<sup>19</sup> Livy, 1.43.2.

outfitted similarly to the first except they had an oblong shield instead of a round one and no coat of mail or cuirass. The same pattern holds for the other wealth classes, having progressively less armor until the fourth and fifth class with 11 000 to 25 000 lbs, who were just armed with spears, javelins and slings. He also expanded the cavalry to twelve centuries from the patrician upper-class citizenry, the richest men who could afford a horse, establishing the equestrian class.<sup>20</sup>

### **B. Roman Breakaway from the Etrusco-Greek Style of Warfare**

In the literary record, the last king of Rome, Tarquinius Superbus, was driven from Rome by popular revolt. Although these events Livy describes may not have happened so literally, either before or after this time, there is a distinct break between Etruria and Rome, signaled by the election of two officials called Consuls. The election of these Consuls constitutes the first adaptation of Roman society out of necessity, the process of voting for temporary leaders coming from the Greeks, and the total command of the military by the leaders coming from the Etruscans. The phalanx formation would continue to be used by Rome, with the first military adaptation taking place during conflict with a hill tribe known as the Samnites.

### **I. Historical Dates**

The events of the second Samnite War of the fourth century BCE provide the first instance of the adaptation of tactics, weapons, and armor by the Roman military to compensate for changing battlefield circumstances and requirements for victory that otherwise would have jeopardized its very survival. These instances are of the utmost importance because the outcome of this war led Rome on a continuous cycle of expansion through military adaption. With most of the central and northern regions

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<sup>20</sup> Ibid, 1.44.3.

of the Italian peninsula under their control, the Romans came into contact with the Greek peoples of Magna Graecia to the south. That contact led the people of Tarentum to call for aid from king Pyrrhus of Epirus, and after his withdrawal from Italy the Romans again expanded to control the entire mainland peninsula. This new position led to their contact with the Mamertines and the conflict around Messenia, which was the catalyst for the first Punic War with Carthage, requiring Rome to adapt to new combat situations for survival. Scholars such as T. J. Cornell argue that the Roman army developed the early maniple formation as well as the *scutum* and *pilum* during the Samnite Wars. Difficulty arises with ancient literary sources when trying to pinpoint the date of development, which is important to establish a chronology of events in order to outline clearly changes in battlefield circumstances and subsequent threats of survival.<sup>21</sup> Livy writes that the Roman army developed the maniple formation during the interim period between the first and second Samnite Wars (340-327 BCE).<sup>22</sup> Cornell and Southern disagree with Livy's account of the Samnites and argue that the maniple formation came out of military reforms imposed in 311 BCE and that these reforms allowed the formation to practically function on the battlefield compared to what was previously in place.<sup>23</sup> It is Livy who recounts these reforms, and he points out that the number of military tribunes doubled from eight to sixteen,

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<sup>21</sup> T.J. Cornell, *The Beginnings of Rome — Italy and Rome from the Bronze Age to the Punic Wars (c. 1000–264 BC)* (New York: Routledge, 1995), 115.

<sup>22</sup> Livy, 8.8.

<sup>23</sup> Pat Southern, *The Roman Army: A Social and Institutional History* (Santa Barbara: ABC Cilo, 2007), 41.

with four per legion.<sup>24</sup> Southern suggests that this increase of tribunes coincides with the increase of the annual Roman levy from two to four legions, and disagrees with Livy's account of 340 BCE as the date for that.<sup>25</sup> Around 311 BCE seems like the most plausible date for this development, due to the events leading up to that year during the second Samnite war, the reasons for which will be outlined below.

Polybius, our best source on the subject, wrote about the maniple formation during the end stages of the Punic wars (264-146 BCE), over a century after its initial development, allowing for considerable development to take place.<sup>26</sup> The weaknesses of the phalanx need to be consulted in order to piece together what the initial maniple system would have looked like, what weapons and armor were employed, and how exactly it came out of the Samnite Wars.

## **II. Weaknesses of the Phalanx**

The phalanx formation, while formidable and highly utilized throughout the Greek world, had several limitations and weaknesses that could be exploited by an opposing army. First, the formation had to move in unison either front or back, as the unbroken bulwark of shields made the unit as a whole hard to turn while keeping the cohesion of the shield wall intact. Without that cohesion, the enemy could press the holes formed out of the attempted turn, or alternatively attempt to flank the formation from its side. Second, the formation worked best on flat terrain where again the cohesion of the shield wall could best be maintained. Greek sources such as Thucydides give examples of this weakness when he wrote about a Spartan phalanx

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<sup>24</sup> Livy, 8.9.2.

<sup>25</sup> Southern, *The Roman Army*, 43.

<sup>26</sup> Polybius, *The Histories* (New York, Oxford University Press, 2010), 6.

that was routed by a smaller, mobile Athenian unit who were able to use the rocky terrain of their surroundings to their advantage.<sup>27</sup> Third, the formation, when in the ideal conditions for implementation, tended to shift right when pushing forward. The reason being that the right-most side of a phalanx was bare thanks to the nature of the hoplon shield wall. The soldier used his shield to cover the left side of the man beside him, with that man protecting the one to his left and so on, leaving the man on the right-most side unprotected and therefore more vulnerable to attack. One final weakness of the phalanx formation when compared to the manipule system was the fact that it acted as a single unit all working towards the same objective, and that the slightest fracture of cohesion in one part due to either rocky terrain, fleeing troops, or flanking from the side could destroy the whole unit. The failure of the phalanx used by the Romans are attributed to these weaknesses; all of them faced during the Samnite Wars.

### **III. Geographical context**

It is important to understand the threatened survival of Rome under the phalanx and why they had to change it to alleviate this threat. While the people of Rome and Campania dwelled on relatively flat farming plains, the tribes of the Samnites dwelled along the rocky expanse of the central and southern Apennine mountains. The Apennines are not one continuous mountain chain extending throughout Italy, but rather a series of close-fitting mountain ranges parallel to each other creating a multitude of valleys and passes. The south-central section of the Apennines that the Samnites dwelled along is not as neatly parallel as those of the

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<sup>27</sup> Thucydides, *The Peloponnesian War* (New York: Oxford University Press, 2009), 90.

northern regions, and instead is broken up into smaller groupings of mountain peaks and hills with uneven terrain.<sup>28</sup> These conditions would have proved inhospitable to an army practicing the phalanx formation, due to the weaknesses mentioned above, and a series of demoralizing defeats inflicted upon the Romans during the second Samnite War made this evident to the Romans, who then developed the maniple system.

#### **IV. The Maniple: Development, Organization, and Equipment**

Using both Livy and Polybius as main sources, a clear explanation of the development of the maniple formation and the weapons utilized is given that emphasises its superiority over the phalanx and its effectiveness in the Samnite Wars as a means of counteracting the threat to survival. Livy 8.4.3 outlines the basic organization of the maniple:

The foremost line consisted of the hastati, formed into fifteen companies, drawn up at a short distance from each other. These were called the light armed companies, as whilst one-third carried a long spear (hasta and short iron javelins), the remainder carried shields. This front line consisted of youths in the first bloom of manhood just old enough for service. Behind them were stationed an equal number of companies, called principes, made up of men in the full vigour of life, all carrying shields and furnished with superior weapons.<sup>29</sup>

Polybius corroborates Livy's account of the basic descriptions of the first two maniple sections. One main difference between their descriptions are the numbers

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<sup>28</sup> Philip Lake, *Apennines* (London: Cambridge University Press, 1911), 163.

<sup>29</sup> Livy, 8.4.3.

given for the size of each section of maniples, which Polybius states is ten maniples of 120 men (roughly two centuries of 60 men, although the number could be as high as 80) per section with the third group, the *triarii*, made up of the most experienced soldiers, forming the last with just a fixed number of five maniples, half the number of the other two.<sup>30</sup> Each maniple is arranged in three lines of forty legionnaires, resembling a rectangle-like shape. This puts the maniple legion described by Polybius at 4200 with 1200 *hastati*, 1200 *principes*, and 600 *triarii*, with any extra forces being divided between the first two groups up to 5000 or even 6000 depending on the level of danger and the *triarii* remaining fixed at 600.<sup>31</sup> Livy's number of fifteen maniples per group puts the *hastati* and *principes* at 1800 men, with the *triarii* still at 600 men.

Another main difference between the two descriptions that leads one to believe the maniple system underwent development between the Samnite and Punic wars, is Livy's description of the third group, the *triarii*. Polybius simply states that there were just 600 *triarii* neatly organized into five maniples. In Livy's description, the third group consisted of another fifteen maniples further divided into three sections call *vexillae*: the *triarii* proper, the *rorarii*, and the *accensi*, each lead by a group of 180 men called the *pilus*.<sup>32</sup> Both the *rorarii* and *accensi* were the poorest in the legion and as such could only afford rudimentary equipment. The *accensi* could afford slightly more equipment (usually just a spear or sword but no shield) than the *rorarii*, who were often just equipped with slings and acted as skirmishers.<sup>33</sup> The

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<sup>30</sup>Polybius, *The Histories*, 6.21.8.

<sup>31</sup> Ibid, 6.22.3.

<sup>32</sup> Livy, 8.8.5.

<sup>33</sup> Ibid, 8.8.7.

maniple system described by Polybius had four infantry sections: the *hastati*, *principes*, *triarii*, with the *velites* made up of the poorest and youngest soldiers and being placed at the front lines of each maniple with a round shield, sword, and javelin to act as initial skirmishers.<sup>34</sup> Southern argues that by the time of at least the second Punic War both the *accensi* and *rorarii* were phased out and replaced by the *velites* to act as skirmishers.<sup>35</sup> This shows a clear development of the system to allow for stricter organization unencumbered by impractical sub-divisions of skirmishers which helps with the overall flow of the formation in battle.

When deployed on battlefield the maniple system is arranged in a checkerboard fashion with each of the ten maniples of *hastati* spaced out leaving just enough room between for the *principes* to fill the gap immediately behind it, the same as the *triarii* with the gaps made by the *principes*.<sup>36</sup> The *velites* were situated in front of the *hastati* and harassed the enemy before the main infantries clash together and retreated between the gaps. When the battle begins the *hastati* are the first to engage, and when they tire and begin to waver they then retreat through the aforementioned gaps to the back of the formation behind the *triarii* while simultaneously the *principes* advance through the gaps to fluidly resume engagement with the enemy.<sup>37</sup> This same principle applies to the *triarii* when the *principes* begin to tire. The cavalry, remaining

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<sup>34</sup> Polybius, 6.22.1.

<sup>35</sup> Southern, 100.

<sup>36</sup> Livy, 8.4.

<sup>37</sup> Ibid, 8.7.



at 300 in number from the phalanx formation, are placed at each flank for protection along with an equal number of allied cavalry and infantry.<sup>38</sup>

This new Roman system provided four distinct advantages over the Etrusco-Greek phalanx. First, each maniple could act independently from or in conjunction with the formation as a whole; the three lines of the maniple allowing for limited turning capabilities due to it only having 120 men total rather than the whole of the infantry involved.<sup>39</sup> Second, the way in which the maniple ranks shift from *hastati* to *principes* and from *principes* to *triarii* allow for fresh troops to enter into a battle where the enemy is already partially worn out from fighting, as compared to the phalanx where each of the front ranks stay in their positions for the duration of the battle. Third, the command structure of a maniple legion was intentionally intricate and hierarchical so as to reinforce command authority when the legion was under duress and had a chance of being routed. According to Polybius, who gives the best known account of this chain of command, twenty-four military tribunes (eight more than Livy had given for the Samnite Wars) were divided up equally between the four legions. The tribunes were charged with selecting ten men from each division of *hastati*, *principes* and *triarii* to serve as company commanders, and they in turn choose another ten to serve as their second in command. From there the commanders choose from each maniple two senior officers and two junior officers, also known as centurions, to lead the maniple into battle. Those centurions choose from their maniple two men of considerable fortitude to be the standard bearers. Polybius himself discusses the merits of such a system when he writes “It makes sense for the

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<sup>38</sup> Ibid, 8.11.

<sup>39</sup> Cornell, *The Beginnings of Rome*, 100.

there to be two centurions for each unit, because it is never clear how any given centurion is going to behave or what may happen to him. War allows no excuses, and they never want to be the maniple without a centurion to lead it".<sup>40</sup> This also furthers the point that the maniples, thanks to this command structure, were able to act independently depending on what orders they are given. While the *triarii* were made up from the oldest and most experienced soldiers, the *hastati* were of the youngest and most inexperienced, with the *principes* being those in their prime with considerable military experience. Lendon asserts that the youngest were placed at the front lines both to gain considerable experience on the battlefield and to instil courage and bravery into the young soldier, highly valued traits for the Romans.<sup>41</sup> This was fundamentally different from the economically based phalanx which put only those soldiers who could afford the necessary armaments in the front of the formation to serve as the main bulwark of the shield wall. This had the effect of making only those in the front of the formation, where most of the action was, courageous and experienced in battle, whereas the maniple system produced braver as well as more experienced troops at a faster rate. Indeed, even the nature of the shield wall employed by the maniples is different from that of the Greek phalanx.

Drastic changes in military formation, such as the phalanx to the maniple, developed over time, especially as the Romans did not institute standardized equipment until the late second and the early first centuries BCE, under the reforms of Marius. Equipment such as shields and various weapons described by both Livy and Polybius, therefore, would not have been as uniform as depicted, but rather

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<sup>40</sup> Polybius, 6.24.7.

<sup>41</sup> J.E.Lendon, *Soldiers and Ghost* (Connecticut: Yale University Press, 2006), 176.

conforming in broad strokes to what was mainly used according to what could be afforded. The *scutum* was the primary shield of the Roman army for most of its history. Livy is not as descriptive as Polybius about the *scutum*, simply describing it as an oblong shield.<sup>42</sup> Polybius on the other hand, gives a particularly detailed description of the *scutum* used by Roman forces during the Punic Wars. It had the dimensions of two and a half feet wide and four feet long, made from two layers of wood glued together with cavas on the outside covered in calfskin, rimmed with iron sidings and fitted with a central boss and had the curvature depth of a palm.<sup>43</sup> It is clear that serious development occurred during the century between each conflict, and it can be said that these developments came out of the organizational structure of the maniple. Scholars argue that the early oblong *scutum* described by Livy came into use and developed into Polybius' description mainly due to the increased use of missile projectiles during the Samnite Wars, specifically javelins. The round *clipeus* or hoplite shield were ineffective against these kinds of missile attacks, due to its inability to cover most of the body like an oblong shield could.<sup>44</sup>

The geometrics of the maniple system also played a role in this development. The rectangular shape of each maniple seems to have worked better with similarly shaped shields because it allowed for a relatively symmetrical shield wall that could be adapted to specific formations, the most famous of which is the *testudo*, or tortoise formation. The shields of the outlying legionnaires are faced out in their respective directions while those on the interior overlap their shields from above to form a roof

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<sup>42</sup> Livy, 8.8.3.

<sup>43</sup> Polybius, 6.23.2-5.

<sup>44</sup> Burns, *The Homogenization of Military Equipment*, 75.

or shell over the whole of the group, allowing for unimpeded (albeit slow) movement. Further evidence for the widespread nature of the early oblong *scutum* in the manipular legion comes from Livy's account on the equipment of the earlier phalanx, which had the second wealthiest classes and below using oblong shaped shields as opposed to the round hoplon based shield. This meant that more legionnaires could afford this kind of shield and add to the cohesion of the shield wall, eventually developing into the *scutum*. The exact reasons for this extensive military and equipment overhaul are found in the second, or 'Great' Samnite War c. 327 BCE.

The events of the second Samnite War make it clear that the manipular legion developed during this war came not out of a desire to gain territory (even though the founding of a Roman colony in Samnium prompted the war itself), but as a response to devastating defeats inflicted on the legions at both the Caudine Forks and Lautulae. These disasters put Rome in serious jeopardy of waging a long and costly war detrimental to Rome's survival. While Livy states that these reforms took place c 340 BCE after the first Samnite War, it is doubtful that the brief two-year war, in which Rome had a near catastrophe and lukewarm success overall in Samnium, would have prompted the Romans to abandon the system of combat they had been using for over two hundred years. Even after the Gauls supposedly sacked Rome c. 390 BCE the Romans did not abandon the phalanx. Instead, it was the sheer length of the second Samnite War (c. 327-304 BCE) that forced the Romans to re-think their military organization, due to two factors evident to them. First, although in both wars they initially had success when fighting along the flatlands and minor hills leading into the

interior of Samnium.<sup>45</sup> The battle of Saticula and especially the surrender of the legions at the Caudine Forks, where any attempt to escape the rocky enclosure was met by missile fire, made the Romans realize that the phalanx was ineffective against the rocky terrain of Samnium. This proved problematic, as the Samnites, who had a reputation for being fierce fighters, would continue the war until Rome sued for peace on unfavourable Samnite terms. Second, the length of the second war fought was considerably longer than the first and was steadily draining Roman resources and putting considerable political stress on the city. These reasons, combined with the fact that the Etruscans entered into the conflict after their forty-year peace with Rome had come to an end c. 311 BCE, most likely prompted the Romans to change their military system to counteract these threats to its survival. In fact, after 311 BCE, the Romans won several battles against both peoples, an example being in 310 BCE at Perugia against the Etruscans, to the point where the Etruscans sued for peace in 308 BCE and the Samnites in 304 BCE, ending the war with a total Roman victory. The second Samnite War and the battlefield circumstances of the rocky, uneven terrain of Samnium located in the south-central Apennines forced the Romans to adapt to changing requirements for victory. The phalanx formation was ineffective in such terrain and put the Romans in serious danger more than once. Creating the manipular system out of this, Rome then adapted weapons and armor to best complement the new system and thus was able to succeed where the Etrusco-Greek phalanx had failed. Victories in the second and third Samnite war using this system allowed Rome to control more territory in central and northern Italy than they had before these

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<sup>45</sup> William Doberstein, *The Samnite Legacy: An Examination of the Samnitic Influences Upon the Roman State* (Lethbridge: University of Lethbridge, 2014), 89.

conflicts. The next major adaptation for Roman survival came out of the first Punic War with the formation of the Roman navy.

## V. The Roman Navy

The navy fleet created out of the first Punic War (264-241 BCE) were not the first ships employed by the Romans, but it was the first fleet to have major military implications towards the adapted survival of Rome, and is a perfect example of how Rome adapts for survival, not simply for expansion. Goldsworthy argues from Livy that the first Roman fleet was constructed c. 311 BCE as a result of increased expansion thanks to the second Samnite war. Two new magistrates, called *Duumviri Navales*, were created to command a fleet of twenty triremes, most likely modeled after Greek designs and were considered part of the army as a whole, not a separate entity like modern navy forces.<sup>46</sup> For the most part the Romans did not consider themselves a seafaring military power. They concentrated the majority of their military efforts on the land where their skills and advantages were strongest, and as a result did not feel the need to maintain a particularly strong fleet, although they did recognize its importance. This navy of triremes was mostly responsible for coastal protection from piracy and protection of trade to the port town of Ostia, as well as the establishment of a few maritime colonies along the coast. However, they were easily defeated by a more skilled opponent, such as by the Tarentines c. 282 BCE.<sup>47</sup>

It seems prudent at this time to explain, without going into lengthy detail, the basic structure and use of the trireme, one of the most utilized and popularized ancient

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<sup>46</sup> Livy, 8.9.1.

<sup>47</sup> Adrian Goldsworthy, *The Fall of Carthage: The Punic Wars 265–146 BC* (London: Cassell Publishing, 2000), 107.

warships in antiquity, in order to provide context for the types of ships later employed by the Romans. Possibly developed from the penteconter and bireme created by either the Phoenicians or the Greeks in Corinth c. 8th century BCE, the trireme is a type of galley that is propelled by three rows of about 30 oars, but the number could be higher depending on the length of the ship. Each oar was driven by one man with the overall intention of gaining enough speed to drive into an enemy ship and sink or at least damage it significantly with a bronze ram attached to and protruding from the prow. The penteconter uses a single row of 30 oars while the bireme uses two.<sup>48</sup> The construction and design of the trireme was often laborious, intricate and expensive, which can explain why Rome initially only had 20 triremes in its employ. Concerning the design, the trireme had to fit specific fundamental aspects in order to build and function at sea. These fundamentals included: accommodations, propulsion, weight and waterline, centre of gravity and stability, strength, and feasibility.<sup>49</sup> The accommodations of the oarsmen took the form of three file platforms on each side that, while compact, allowed enough space for it to be workable. Each level of oarsmen had their own designated name; in descending order they were *thranites*, *zygios* and *thalamios*. In order for the ship to run at optimal speeds, a high oar-gearing ratio was needed, which is the ratio between the outboard length of an oar vs. the inboard length, and allowed the oarsmen to smoothly rotate the oar attached in the joint with more force, propelling it faster. The weight of a trireme was a very important factor in its speed, crucial to the military implications of ancient naval

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<sup>48</sup> Ibid, 108.

<sup>49</sup> Lionel Casson, *Ships and Seamanship in the Ancient World* (Baltimore: John Hopkins University Press, 1995), 17.

warfare. To help reduce its weight the trireme was constructed with either fir, pine, or cedar due to their light weight and availability, as well as oak to increase its strength against opposing ships. It could not be too light, however, or the structural integrity of the ship would be compromised due to high winds and rough seas. The overlapping nature of the oar ports where the oarsmen sat also provided a low centre of gravity that gave the ship added stability.<sup>50</sup> They also needed a type of cable called a *hypozaomata*, which would be run along the very middle of the bottom of the ship from bow to stern in order to keep the light ship from ‘hogging’ which is when the middle portion of the ship buckles upward above the water causing major damage to the ship. Greek terms such as these were used by the Romans as navy terminology.<sup>51</sup> Based on literary evidence as well as archeological finds, the average length of a trireme would have possibly been around 37m in length and 6 m in width. With its three files of oarsmen the trireme could possibly have reached speeds of up to a maximum of eight knots with a leisurely pace at four, based on the speeds reached with the reconstructed trireme *Olympias*.<sup>52</sup> It is also clear that triremes needed a lot of maintenance and upkeep, requiring materials such as ropes, masts, cables, rudders and oars on a constant basis. As well, the design and the lumber used also meant that it would get waterlogged when left in the water for long periods of time, and therefore had to be dry-docked in a harbor or beach when not in use, although the light weight of the ship

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<sup>50</sup> John F. Coates, *The Athenian Trireme* (London: Cambridge University Press, 2000), 22.

<sup>51</sup> Nic Fields, *Ancient Greek Warship, 500-322 BC* (London: Osprey Publications, 2007), 90.

<sup>52</sup> *Ibid*, 92.



meant that it could be carried out by as few as 140 men. In addition, the lack of any stockpiled provisions meant that they could not venture into open sea or travel along the coasts for more than a few days at a time without stopping to re-supply.<sup>53</sup> The Athenians are said to have replaced up to 20 triremes a year for the upkeep of its fleet in the fifth century.<sup>54</sup> The crew of a typical trireme which the Romans modeled after usually consisted of 170 oarsmen, a crew and captain, who was called the Trierarch, as well as a helmsman, boatswain, lookout(s), shipwright and piper (who kept a steady beat to help keep the oarsmen in a unified rhythm while rowing) and sailors to man the sails. In addition to these were ten to twenty legionnaires to help defend the ship from the above deck.<sup>55</sup> It is from the design of the trireme that heavier warships were built, first by the Carthaginians, then by the Romans as an adaptation to new battlefield circumstances centered around sea warfare in the Mediterranean, which they previously had little experience in.

The navy that Carthage used developed over the course of the fifth and fourth centuries BCE. By the time of the first Punic War it mostly consisted of both quadriremes and quinqueremes, which were based on the design of the trireme and had four and five levels of oarsmen and this allowed them to establish naval hegemony over the western Mediterranean. Pliny the Elder attests that Aristotle credited the creation of the quinquereme to the Carthaginians, and although the actual date is unknown it is believed to be sometime in the early fourth century.<sup>56</sup> When

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<sup>53</sup> Goldsworthy, *The Fall of Carthage*, 98.

<sup>54</sup> Nic Fields, *Ancient Greek Warship*, 97.

<sup>55</sup> Ibid, 98.

<sup>56</sup> Victor D.Hanson, *A War Like No Other* (New York, Random House, 2007), 55.

Rome had established hegemony over mainland Italy they were drawn into the conflict around the island of Sicily, which was split between Carthaginian control on the western side, and Greek control under Syracuse on the eastern half. Around 288 BCE, an Italian mercenary group from Campania known as the Mamertines had taken over the small city of Messenia on the north-eastern coast of the island under orders from the Greeks at Syracuse, but over time they began raiding the countryside and the Greeks tried to oust them.<sup>57</sup> The Mamertines then appealed to both Rome and Carthage for assistance and the Carthaginians answered by sending a garrison to help defend the city, but they soon proved to be unwanted by the Mamertines who then applied to Rome for assistance in expelling the Carthaginians.<sup>58</sup> The Roman Senate debated the issue, but it was decided that if Carthage was to take over the island of Sicily it would pose a threat to Rome having them so close to Italy, so they sent aid c. 265-64 BCE.<sup>59</sup> After landing virtually unopposed, the Romans took control of Messenia and marched south to besiege Syracuse, which surrendered after a brief siege under the terms that Syracuse would become Rome's ally and support the Roman forces while they were on the island.<sup>60</sup> The Carthaginians then declared war and the First Punic war began. The first battle of Agrigentum on the central southern coast of the island, although a victory for the Romans, made it clear to them that the main theater of this new war would not be the island itself with its rocky, uneven mountainous interior, but along the coasts of the island. The Romans besieged the

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<sup>57</sup> Pliny, *Natural History* (New York: The Penguin Group, 1991), 127.

<sup>58</sup> Polybius, 1.18.2.

<sup>59</sup> *Ibid* 1.22.8.

<sup>60</sup> Polybius, 1.20.6.

town for several months, but Carthaginian supplies and reinforcements sailed to the city and cut off Roman supply lines and forced them to build walls of contravallation to defend themselves. Although the Romans won a victory thanks to a land battle that took place, the Carthaginians defending the city escaped on their ships.<sup>61</sup> Polybius writes that around 261 BCE the Romans managed to find a shipwrecked Carthaginian quinquereme and the Senate issued the construction of a fleet of one hundred quinqueremes and twenty triremes (possibly re-built versions of their old navy to strengthen their forces) from the designs of that ship.<sup>62</sup> This is a substantial increase from their previous navy, but not having the naval expertise of the Carthaginians the Romans were still at a disadvantage and were forced to adapt to new circumstances in order to survive. While the Carthaginians were able to skillfully maneuver their ships to ram in accordance with practiced naval warfare at the time, the Romans were not and decided to change the practice of naval warfare to their advantage with the utilization of the *corvus*. Meaning ‘crow’, this device functioned like a retractable boarding plank with sharp claw-like hooks at the end that dug securely into an enemy ship when pulled alongside the length of another ship, effectively turning a sea battle into a land battle where the Romans would have the advantage.<sup>63</sup> Additionally, the Romans left the maintenance and piloting of their ships to the Greeks under their employ from Magna Graecia, as the Greeks had more experience in naval combat than the Romans. Although the Romans had initially lost to the Carthaginians with their fleet in the Battle of the Lipari islands, this was more of an ambush than of a

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<sup>61</sup> Polybius, 1.19.20.

<sup>62</sup> Ibid, 1.20.1.

<sup>63</sup> Polybius, 1.22.8.

pitched battle, and the following Battle of Mylae saw the Roman fleet destroy and/or capture a number of Carthaginian vessels, which had to maneuver around the *corvus* to hit them from the side or rear of Roman vessels.<sup>64</sup> The number of ships for this battle were roughly 103 ships for the Romans and 130 for Carthage. After this battle the Romans won several victories including the famous battle of Cape Ecnomus where a Carthaginian fleet of around 350 met a Roman fleet of roughly the same size attempting to sail to Africa. This was one of the largest naval battles in antiquity and shifted the hegemony of the western Mediterranean to the Romans, who, although losing their fleets in storms on multiple occasions both before and after this battle, managed to defeat Carthage again at the battle of the Aegates Islands.<sup>65</sup> This forced the general Hamilcar Barca to concede defeat and sign the Treaty of Lutatius, officially establishing Roman naval power in the western Mediterranean.

Roman naval superiority continued throughout the Punic Wars. It forced Hannibal Barca to take the land route into Italy during the second Punic War where it remained a primarily land-based war, although ships took Scipio Africanus to Africa in order to force Hannibal to retreat from Italy to fight on the plains of Zama. Roman expansion into the Hellenistic kingdoms starting with the Macedonian wars brought their naval hegemony into the eastern Mediterranean. After Pompey Magnus eliminated piracy stemming from the eastern Mediterranean in just three months c. 67 BCE (attesting the power of the navy at this time) and the Battle of Actium c. 31 BCE between the fleets of Octavian Caesar and Marc Antony and Cleopatra, the navy was reduced drastically by Octavian. Only a rudimentary force was kept to patrol the

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<sup>64</sup> Polybius, 1.23.1.

<sup>65</sup> Polybius, 1.17.2.

coastal regions partly because it was expensive to maintain a large fleet, and also because Roman control of the Mediterranean Sea was complete, which they called *Mare Nostrum*, 'Our Sea'. The navy continued to be of importance outside the Mediterranean, allowing the Emperor Claudius to successfully invade Britannia and turn it into a province. It steadily declined afterwards as Rome had no need of a major standing navy because all major sea routes around them were secure, and at the same time they continued to expand from the land, coming against the next change in battlefield circumstances during the late Republic under the general Marius.

## **Chapter Two**

Stagnation of the Roman legions began with the Marian reforms with no distinct changes in military practice until the Severian dynasty and the crisis of the third century. The Marian reforms of the late second century BCE represent the standard military practices of the Late Republic and early imperial period of the Principate. The establishment of the cohort legion and the Pax Romana by Marius and Augustus led to a consolidation of Roman culture and military practices. Weapons, armor, as well as training and tactics reached their height after these reforms. Relieved of any immediate external pressures on the city of Rome during the Pax Romana, Roman culture, including military practices, became stagnant. This resulted in a high point or golden age for later Romans such as the military historian Vegetius (c. 400 CE) to try and imitate. It was the professional army created by Marius and modified by Augustus as the imperial army that remained the standard for the duration of the Pax Romana. This was the structure which was subject to stagnation, illuminated by comparisons with later Principate armies such as in the Flavian and Nervian dynasties. The lack of territorial expansion and the establishment of permanent forts had detrimental effects on legionary training. New methods of military practices started by Marius also had negative effects on the army. It led to increased infighting among the legions, who were now more loyal to the general paying them than to the state. This eventually led to the crisis of the third century and a power-hungry Roman army concerned only with their immediate situation. This impeded their ability to adapt until after the crisis.

### **A. Marian Reforms in the Late Republic**

Historical analysis reveals that the Marian reforms were not as a result of survival through direct military conflict, but because of spoils acquired through those

conflicts. When Marius had become consul near the end of the second century BCE, the Roman Republic was in turmoil due to the massive growth of slave populations that occurred since the subjugation of Macedon and Greece.<sup>66</sup> This had detrimental effects on the military, which hinged on a system of property requirements to levy and organize its ranks. Marius recognized this and through his reforms he was able to adapt the Roman military into a professional fighting force. He also established the *auxilia*, a military force separate from the legions and assembled from non-Roman citizens living within the Republic. Prior to these reforms, a Roman citizen had to be a member of the fifth census class or higher in order to be counted into the legion of the Republic. The census classes ensured that Roman citizens were able to afford the basic armaments to effectively participate in legionary combat. However, the more slaves Rome acquired, the poorer Roman citizens became due to a lack of available work.<sup>67</sup> Unable to tackle the problem of slave labor, Marius found a way around it by abolishing the property requirement and equipping any man willing to join the army.

### **I. Armor and Weapon Changes**

With poorer citizens joining the legion and having no method of equipping themselves, Marius, using state funds, provided them with standardized equipment. These included: A Montefiorino helmet (later a Coolus helmet; a similar design), a *lorica hamata* mail body armor made from interlocked iron rings, greaves, a *scutum*

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<sup>66</sup> Erik Hildinger, *Swords Against the Senate: The Rise of the Roman Army and the Fall of the Republic* (Boston: Da Capo Press, 2002), 65.

<sup>67</sup> P.A. Brunt, *Italian Manpower 225 B.C. - 14 A.D.* (London: Clarendon Press, 2003), 50.

shield, two *pila* (one light one heavy), and a *gladius hispaniensis*.<sup>68</sup> At certain points the armor and weaponry of the legion would undergo certain changes, but not drastically enough to change the functionality of the legion or the empire. The *gladius hispaniensis* would see variants such as the Mainz, Fulham, and Pompeii types.<sup>69</sup> These forms, although modifying the physical shape of the blade, did not affect its primary function on the battlefield as a thrusting and stabbing sword.

A prime example of armor change was the incorporation of the *lorica segmentata*, segmented iron plates that overlap the torso and shoulders separately. The most iconographic examples are found on Trajan's Column constructed in 113 CE. The relief images on the Column indicates that the *lorica hamata* had been phased out due to most of the soldiers wearing *lorica segmentata* and the auxilia wearing mail armor.<sup>70</sup> Another monument by Trajan, the Adamclisi Tropaeum, however, shows Roman and auxilia soldiers donning exclusively mail or scale armor. This led some to suspect that Trajan's Column was constructed to present an idealized version of himself and the Roman soldiers under his command in Dacia.<sup>71</sup> The Tropaeum, therefore, seems to represent a more realistic account of the conflict in regards to armor.

Marius also established minimal terms of service and payment, which stated that after an individual legionary enlisted, they had to serve for at least 16 years. After

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<sup>68</sup> Adrian Goldsworthy, *The Complete Roman Army* (London: Thames and Hudson, 2011), 47.

<sup>69</sup> *Ibid*, 50.

<sup>70</sup> Julian Bennett, *Trajan, Optimus Princeps* (New York, Routledge, 1997), 102.

<sup>71</sup> *Ibid*, 103.



this period of time the soldier would receive a payment bonus or a plot of land in one of the provinces. Augustus lengthened the term to 25 years of service with an additional 10 years in the reserves. He also modified the auxilia that was created during the Marian reforms, granting Roman citizenship to those in the auxilia who completed 25 years of service. The vast majority of those residing within the territories of the late Republic and early Empire were not Roman citizens, and so could not take advantage of the numerous benefits that came with it.<sup>72</sup> Augustus' modification of the auxilia not only provided a means of acquiring citizenship, but also supplied the army with a continuous flow of specialization troops such as archers and cavalry. The granting of citizenship for the auxiliary soldier and his family was highly desired for its advantages and on account of this many voluntarily signed up.<sup>73</sup> Due to the significant number of years required for the benefits of citizenship, the organization of benefits to the auxilia legion was able to remain standard throughout the Principate. It was not until the Emperor Caracalla granted citizenship to all people residing within the empire in 212 CE that this means of reward for the auxilia changed.

The reforms implemented by Marius also covered transportation of troop equipment. Once requiring sizable baggage trains when the army was on the move, the equipment and supplies of the legion were carried by the troops themselves. This reduced the amount of unnecessary personnel on long marches while at the same time increased the endurance and strength of individual soldiers.

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<sup>72</sup> Connelly, 135.

<sup>73</sup> Paul Holder, *Studies in the Auxilia of the Roman Army from Augustus to Trajan* (London: B.A.R publishing), 1980.

## **II. Training**

The benefits gained carrying heavy amounts of equipment and supplies went hand-in-hand with the training a newly full-time legionary would receive. Training was intense, but also necessary in order to deploy standing legions that had to be ready to fight at a moment's notice. However, it also came with harsh consequences for inadequacy or cowardice in battle, one of which was decimation, where one soldier out of a lot of ten were beaten to death by the other nine.<sup>74</sup> These changes had a positive impact toward the formation of the legion as a whole. The conscription of poor Roman citizens both young and old meant there would be a closing experience gap between those new to war and those veterans who have been battle tested.<sup>75</sup> It was the amount of training the Roman legionary received outside of war that aided in this effect. This is the reason the maniple system was so effective during the majority of the Republic; it turned inexperienced youth into capable, skilled soldiers. With the new system Marius put into place, the poorest Romans could now enlist for long periods of uninterrupted, paid service whilst gaining experience in the process. As a consequence, it eliminated the vast number of Romans who were unaccustomed to the practices of warfare.

## **III. The Cohort Legion**

Although this amount of training and discipline would be present through the Principate, it was again through Marius that the structural organization of the legion changed to better accommodate the experience levels of the soldiers. The legions

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<sup>74</sup> Jonathan Roth, *Logistics of the Roman Army at War* (Boston: Brill Publishers, 1999), 67.

<sup>75</sup> *Ibid*, 68.

would no longer be organized into three separate lines of combat typical of the maniple system. Instead, Marius utilized the already existing cohort structure used for political and census uses and turned it into the standard military formation.<sup>76</sup> The legion now consisted of ten cohorts of elevating fighting experience and strength numbering about 480 men each or six centuries of 80 men. Their designation was through simple numerical distinction: cohort one, cohort two, etc. The exception to this number was the first cohort which consisted of about 800 men, or ten centuries, which were made up from the best fighting men of the legion.<sup>77</sup> Another reason Marius formed the cohort in battle was to account for the tactical weaknesses present within Maniple system. The same flexibility of the maniple system that allowed for easy flanking also made the formation vulnerable to direct onslaughts from larger armies of opponents.<sup>78</sup> These weaknesses became more apparent at the start of the Cimbrian war c.113 BCE. Estimates averaging 100 000 warriors from the Germanic tribes of the Cimbri and Teutones crossed into Roman territories around Gaul and defeated numerous consular armies. Those included were the armies of the consul Gnaeus Mallius Maximus, under whose command almost 80 000 Roman soldiers were killed at the battle of Arausio, making it the deadliest battle for Rome since Cannae.<sup>79</sup> The main problem for the Romans in this conflict was the vast number of Germanic warriors who, unlike the armies of Greece or Carthage, fought in a disorganized, head on assault. Also, the inexperience of the *hastati* troops at the head

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<sup>76</sup> Goldsworthy, *The Complete Roman Army*, 61.

<sup>77</sup> *Ibid*, 65.

<sup>78</sup> C.M. Gilliver, *The Roman Art of War* (Charleston: The History Press, 1999), 44.

<sup>79</sup> Goldsworthy, 83.

of the traditional maniple formation made fighting against the often large, battle tested Germanic warriors a challenge.<sup>80</sup> This type of pressure on the three-line maniple often made it susceptible to defeat in battles of this kind. Thus, an adaptation of Roman tactics was necessary to avoid potential threats towards the city of Rome.

When Marius took over command and deployed his newly formed cohort legions c. 104 BCE, he was able to soundly defeat both tribes and save the Republic by c. 102 BCE. There were several reasons the cohort legion succeeded where the maniple legion had failed. When looking at the structure, the maniple legions were confined to a three-line checkerboard formation with troops of varying experiences in battle. With the cohort legion, the ten cohorts, bulky and filled with mostly experienced troops, could be placed in different battlefield formations depending on the terrain, the enemy, and the needs and objectives of the commanders. The most favoured of these positions had the numbered cohorts in a two-line formation from right to left. The reserves, equivalent to the *triarii*, were drawn up in the rear and cavalry on the flanks.<sup>81</sup> This formation was favoured because the first cohort, comprised of the most experienced fighting troops, could perform the tactic of ‘rolling up the line’. This tactic meant that the right flank was strengthened and smashed through the left flank of the enemy, puncturing through and routing them from the rear.<sup>82</sup> This tactic proved very effective against the disorganized German armies that

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<sup>80</sup> Gilliver, *The Roman Art of war*, 48.

<sup>81</sup> Ibid, 50.

<sup>82</sup> Yann Le Bohec, *The Imperial Roman Army* (London: B.T. Batsford LTD, 1994), 11.

worked more towards individual strategy in battle rather than cohesiveness as an army.

Another reason the cohort was superior to the maniple was the ability of the cohort legion to rotate fresh troops into battle quicker than the maniple formation. Drawn up into a single line on the command of a senior centurion, the front lines of the legion rotated to the back of the formation. This let fresh troops into battle on an individual level rather than with whole maniples, repeating this signal at regular intervals.

Communication in battle had also been improved greatly under the cohort legion. Previously, the general and/or his officers would ride along the length of the battlefield shouting orders in the hopes that each unit would function according to plan.<sup>83</sup> Marius implemented the legion standard as an effective way to communicate precise tactical orders in a timely manner. The purpose of these standards was not only to serve as a communication tool, but as a symbol of the legion and its glory where the standard bearer would gesture the standard, translating into orders on the battlefield.<sup>84</sup>

### **B. Stagnation of the Roman Army After Marius and Throughout the Pax Romana**

Through these reforms, Marius created the standard professional army of Rome, and it was this army that conquered the remainder of the territories controlled by the Romans. With the new army, Julius Caesar was able to conquer Gaul and the large war bands that resided there. Augustus was able to conquer Pannonia. Claudius

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<sup>83</sup> Roth, *Logistics of the Roman Army at War*, 45.

<sup>84</sup> Ibid, 48.

was able to conquer Britain, and make Mauritania into a province. Also, it was this army that Trajan used to conquer Dacia and Mesopotamia and make them into provinces. After Trajan, however, expansion of the empire came to a halt. Once the tactical weaknesses of the maniple were modified, very few subsequent changes were made to the army afterwards. The lack of change and decreased acquisition of new territories by way of defensive wars halted the cycle of adaptation for the army. Without those adaptive tendencies, the intensity and frequency of Roman military training diminished.

### **I. Territory**

Territorial acquirement was a key factor in the stagnation of the Roman army. The high expansion rate during the Republic led the Romans to experience a variety of adaptations, as discussed previously. It was Augustus who advised his future successors not to try and expand the empire any further.<sup>85</sup> He realized that if the Empire were to continue to expand at this rate, it would become too large to maintain from the central point of Rome and collapse in on itself. After the death of Augustus, the territorial expansion of the Romans slowed significantly, with the notable exceptions of Britain by Claudius, and Dacia and Mesopotamia by Trajan. A continuous, virtually uninterrupted practice of Marian and Augustan reforms of the military were omnipresent throughout these periods of territorial acquirement before the crisis of the third century. The cohort legion remained in heavy use, as did the practice of voluntary enlistment and conscription as needed.<sup>86</sup> What made the legions

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<sup>85</sup> Ibid, 49.

<sup>86</sup> Le Bohec, *The Imperial Roman Army*, 32.

formidable in battle, however, was that they were in an almost constant state of defensive wars.

It is important to express the word ‘defensive’ because Rome, unlike the Persian Empire, never engaged in offensive wars aimed at conquest. Instead, they practiced the concept of ‘*Ius Bellum*’ or ‘Just war’, where they would engage in conflicts only if it threatened Rome or its interests abroad. Starting from the Samnite wars, the power and influence of Rome expanded from Latium to include central Italy. The Samnites threatened Capua, newly ceded to Rome, and thus threatened Rome itself, making it a just war. The Pyrrhic War against King Pyrrhus of Epirus was started because the Greek city of Tarentum called for aid when Rome declared war on them for sinking a Roman vessel, making this a just war. This war brought most of mainland Italy under Roman control.<sup>87</sup> The Punic Wars started as a result of Roman allies, the Mamertines, being assaulted by Carthaginian forces, which prompted Rome to enter into another defensive war. The Achaean League, calling on aid from Rome also made a war in Macedonia justifiable. Both of these wars added considerable territory to the Republic, from the Mediterranean coast of Hispania to the Aegean.<sup>88</sup>

The main reason for this declining growth through defensive wars, apart from the economic and logistical problems of maintaining lands furthest from Rome, was that there were no more lands that they knew of and could feasibly control. The lands south of the provinces of Africa and Mauritania were (and still are) engulfed by the Sahara Desert. Although the Romans were vaguely aware of sub-Saharan African

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<sup>87</sup> Fields, 65.

<sup>88</sup> Hildinger, *Swords of the State*, 82.

civilizations, they could not commit men and resources to cross the vast Sahara due to its harsh environment.<sup>89</sup> Rome had already acquired all of the lands bordering the Atlantic Ocean. The east and the north, although inhabited, proved to be a constant challenge for the cohort legions to overcome. The people of Germania to the north lived in loosely affiliated tribes, all fighting amongst each other as well as with Romans. The lack of any single, central army meant that the Romans would have to overcome one army after another, and at the same time push further into enemy territory. As the Romans moved forward, they would have to be cautious of rebellions flaring up in the subdued lands behind them, similar to what happened to Caesar during his Gallic war campaign. During his expedition to Britain, Caesar was made aware of a rebellion taking place in recently conquered territories within Transalpine Gaul started by Vercingetorix. He was then forced to return and quell this uprising, which culminated in the siege of Alesia and the defeat of the combined armies of Gaul, subduing the region permanently.<sup>90</sup> The wilderness of Germania also offered a challenge in subduing the land with its thick forestry. It made it so that any Roman legion who entered these areas could be easily ambushed through guerrilla style attacks, which the legion was not equipped to fight against. This is what happened with the three legions under Publius Quintus Varus, most of which did not survive. The lands to the east were challenging to Rome not only because of its dry desert environment, but also because of the Parthian and Sassanid Empires. When the Seleucid Empire started to decay in the mid first century BCE, the Parthian people of what is now north-eastern Iran expanded westwards under Mithridates I. They

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<sup>89</sup> Hildinger, 97.

<sup>90</sup> Ibid, 99.



established control over the eastern portions of the Empire, eventually coming into contact with Rome.<sup>91</sup> The Roman general and triumvir Marcus Crassus, under the pretext of aiding Mithridates who was ousted by a rival, invaded the Parthian Empire in 53 BCE. Although Crassus had superior numbers, seven legions total including auxilia, long marches through the hot desert region wore out the legions, which were then routed by a smaller Parthian force.<sup>92</sup>

The lack of any viable ‘defensive’ wars for the Romans through these geographical barriers meant that the new adaptations were not entering the Roman consciousness, halting further adaptation of military tactics and equipment and progressing stagnation. While this solidified tactics and equipment, the attitude of the army developed and changed drastically starting from Marius until the assassination of Alexander Severus. The first instance of the Roman army attacking the state by the command of a general was under Sulla. The Roman Senate elected his rival Marius to the position of consul, and Sulla led his legions into the city and killed off many leading Roman politicians.<sup>93</sup> It was this developing attitude through inactivity that ultimately led to the crisis of the third century and the introduction of new ideas for adaptation. Occupying legions provided safety throughout the provinces, but the reduction of conflict outside the frontiers created a state of restlessness among the army, especially for those legions stationed for long periods of time. The stagnation of Roman expansion saw the construction of fortified, sometimes permanent

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<sup>91</sup> Gilliver, 50.

<sup>92</sup> Gilliver, 52.

<sup>93</sup> Hildinger, 100.

encampments on the frontiers. Over time, the quality of these camps decreased along with the quality of the legions stationed there.

## **II. Establishment of Forts and Decline of Training**

The size of forts increased during the early years of the Principate, and small towns were beginning to be built around them. The effectiveness of the legions in combat was reduced because defensive wars were less frequent than in the Republic. The soldiers stationed in these camps would often be there for a large portion of their commission.<sup>94</sup> Training, once a vital part of the camp life, had become a nuisance to the legionaries due to minimal amount of conflicts outside of the frontiers and increasing luxuries the camps provided. This fact was outlined by Vegetius in his work *De Re Militari*: “We find that the Romans owed the conquest of the world to no other cause than continual military training, exact observance of discipline in their camps and unwearied cultivation of the other arts of war”.<sup>95</sup> Praising the quality of training previous Roman legionaries received, he goes on to criticise the heavy infantry of his time: “But negligence and sloth having by degrees introduced a total relaxation of discipline, the soldiers began to think their armor too heavy, as they seldom put it on”.<sup>96</sup> It is clear then that the training, and necessity of that training kept the legions of the Principate strong and adaptive to new ideas. Once that necessity dwindled, stagnation set in and fossilized these legions into the historical record. This left behind a model for later Roman army to try and imitate. Vegetius is of particular importance in this regard because he offers an analysis of not only legionary practices

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<sup>94</sup> Ibid, 102.

<sup>95</sup> Vegetius, *De Re Militari*, (New York: Leonaur, 2012), 30.

<sup>96</sup> Ibid, 33.

and standards during the Principate, but also how the legions of his own time do not always measure up to those standards. The following description of his contemporary legions is worth quoting here for the sheer contrast to the Principate he offers and what can be inferred as the cause:

The name of the legion remains indeed to this day in our armies, but its strength and substance are gone, since by the neglect of our predecessors, honors and preferments, which were formerly the recompenses of merit and long services, were to be attained only by interest and favor. Care is no longer taken to replace the soldiers, who after serving their full time, have received their discharges. The vacancies continually happening by sickness, discharges, desertion and various other casualties, if not supplied every year or even every month, must in time disable the most numerous army. Another cause of the weakness of our legions is that in them the soldiers find the duty hard, the arms heavy, the rewards distant and the discipline severe. To avoid these inconveniences, the young men enlist in the auxiliaries, where the service is less laborious and they have reason to expect speedier recompenses.<sup>97</sup>

The amount of inactivity also affected the building of fortified encampments (*castra*) by the later Romans. The practice of building protected camps had taken

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<sup>97</sup> Ibid, 37.

place since at least the Samnite wars, where Livy describes the Romans falling back to their camp after a pitched battle with the Samnites.<sup>98</sup> Throughout these defensive wars, it allowed the Romans to consolidate their position and to adapt cohort tactics to changing conditions each specific territory might present. Since the onset of the Punic wars, Roman military power began to focus outward from Italy, taking away any advantage the Romans might have had. With conflicts and battlefields being drawn-up further away, the Romans had to develop well-fortified headquarters. From there they launched decisive offensive attacks or reverted to a secure defensive position until sufficient help could arrive. Over time, these encampments were methodically organized and mapped out in increasing fashion. As the territory of the Romans expanded further away from the city of Rome, these camps became more permanent and were symbols of those territories and the power wielded within them.<sup>99</sup> There were also camps in the Principate which often acted as permanent forts. Eventually, these forts would have towns built up around them. Some of those towns outlived the forts they were built around, developing into cities such as London, York, Paris, and Barcelona.

The stagnation of the Roman military brought on by the idleness of a full-time standing army in a time of continuous peace remained for the majority of the Principate. It was not until the accession of Septimius Severus in 197 BCE and the crisis of the third century that the Roman army began to adapt again.

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<sup>98</sup> Livy, 8.1.3.

<sup>99</sup> Vagn Buchwald, *Iron and Steel in Ancient Times*, (Copenhagen: Det Kongelige Danske Videnskabernes Selskab, 2005), 40.

## **Chapter Three**

The period following the crisis of the third century is signified by multiple political and military partitions of the Roman Empire. It was split into two halves starting from the accession of Diocletian in 284 CE and ending with the permanent split by the Emperor Theodosius I in 395 CE. Known as the Dominate period of the Roman Empire, this political separation coincided with the re-introduction of adaptation during the crisis of the third century and the migration period (300-700 CE). The new adaptations shaped the formation of the Dominate legions, its organization and hierarchy, tactics, and equipment. The legions of the Dominate would remain the standard in the Western Empire until its collapse in 476 CE, and in the Eastern Empire until c. 611 CE

### **A. The Introduction of New Ideas in the Military**

The stagnation of the Empire's military during the Pax Romana came to an abrupt end due to the events that characterized the late second and early third centuries CE. Increased threats to Rome's survival facilitated a new cycle of military adaptation through necessity. The dilution of the Italian element within both the rank and file and the command structure of the of the army was, in part, responsible for the increased need of military adaptation. The crisis of the third century and incursion of barbarian forces afterwards in the migration period resulted in the dismantlement of the Marian systems of warfare. Both before and during the crisis there was a heavy Roman influence on barbarian practices, which further prompted the need for change in Roman military practices.

#### **I. Dilution of Italian Element with the Military**

A factor in the re-introduction of adaptive tendencies into the Roman army was the dilution of native Italians within the rank and file, and later the higher

command structure of the legions. Starting earlier with the Marian and Augustan reforms and the creation of the auxiliary from the *peregrini*, dilution rapidly progressed with the edict issued by the Emperor Caracalla c. 212 CE. The dilution, in conjunction with the crisis of the third century, broke the stagnation of the Empire caused by inactivity during the Pax Romana and restarted the cycle of adaptation through defensive wars. As previously discussed, in order to entice non-citizens living within the Empire to voluntarily fight for Rome, the auxiliary was created. If they were to enlist and serve for a period of 25 years, these non-citizens were granted Roman citizenship along with their families. The rights associated with this meant that the sons of those who completed their terms of service could join the legion as legitimate Roman soldiers. Over time, there was an increasing amount of citizens who were not of Italian descent within the legion being trained in tactics and equipment of the infantry, and an increased need of new specialization troops.<sup>100</sup> During the course of the Pax Romana, military command, once firmly held by native Italians, also began to give way to a more ethnically diverse framework. Diversification of this kind was not limited to military rank, but also affected political accession as well. After the Julio-Claudian and Flavian dynasties, an increasing number of Emperors, many of whom served in the army prior to their appointment, were non-Italians born in the provinces.<sup>101</sup> Prime examples of such Emperors are Trajan who was born in Hispania and was partially Iberian, and Marcus Julius Philippus, also known as Philip the Arab due to his birth in the province of Arabia. Diversification of the army and other such institutions reached its zenith with the *Constitutio Antoniniana*, an edict issued by the

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<sup>100</sup> G. Burton, *The Roman World* (New York: Oxford University Press, 1988), 52.

<sup>101</sup> Goldsworthy, 98.

Emperor Caracalla in 212 CE that granted Roman citizenship to all the people residing within the Empire.<sup>102</sup> After this act, the second class status of the former *peregrini* began to change. In the late third and early fourth century under Diocletian the auxiliary began to be filled primarily by the non citizen *barbari* who resided outside the borders of the Empire and provided new specialization troops.<sup>103</sup> These changes aided significantly in the introduction of new ideas into the army, but it was the challenges faced by the army during the crisis of the third century that re-introduced the Roman Empire to adaptation through necessity by way of barbarian influence.

## **II. The Crisis of the third century**

Political and military dissension and disease, followed by barbarian incursions during the crisis of the third century, led to the dissolution of military structure, tactics and equipment established and maintained during the Pax Romana by way of inactivity. The crisis began with the assassination of Alexander Severus in 235 CE by his soldiers in Germania Superior, who then nominated Maximinus Thrax and established the cycle of barracks Emperors, another name for the crisis. During this period, 26 men were legitimized Emperors by the senate, although there were more claimants to this title.<sup>104</sup> The majority of these were army generals, and ruled for an average of two years each. The main problem in this aspect of the crisis was the loyalty of the legions to the centralized Roman state. Beginning with Marius and his

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<sup>102</sup> Richard Lim, *Late Antiquity* (Edinburgh: Edinburgh University Press, 2010), 114.

<sup>103</sup> *Ibid*, 116.

<sup>104</sup> Hugh Elton, *Warfare in Roman Europe, AD 350- 425* (New York: Oxford University Press, 1996), 9.

reforms, made into model behaviour by Sulla and Caesar, the loyalties of the army, many of whom were poor, began to shift from the Roman state to the generals responsible for their pay. Even though the problem was temporarily solved by Augustus, the power and influence of the army over who became Emperor grew as the Principate continued. It was best displayed during the crisis, where the army endorsed anyone who could pay them and assassinated those who could not. This kind of power in conjunction with complacency experienced during the Pax Romana and lack of outside incursion, reduced the effectiveness and necessary motivation of the army, making it more susceptible to change later on. The ethnic makeup of the army diversified even further during this period. This was due in part to the edict issued by Caracalla, but also because of a plague that quickly reduced the ranks, which needed to be filled just as quickly. Known as the Plague of Cyprian, named after the Christian bishop who chronicled the event, this pandemic is now believed to be combination smallpox and measles.<sup>105</sup> Beginning in 250 CE until around 270 CE it caused a mortality rate of 15-30% throughout the Empire and drastically reduced the number of fighting men available for recruitment in the army. In a weakened state, the army was forced to recruit from all reaches of the Empire, shrinking the Italian element of the legions to a small fraction of what it originally was during the Principate.<sup>106</sup> It was also during this time of upheaval that the Empire fractured into three separate political entities: the Gallic Empire controlling Gaul, Britannia, and parts of Germania, the Palmyrene Empire controlling Syria, Egypt, and parts of Anatolia, and the Roman

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<sup>105</sup> William H. McNeil, *Plagues and People* (New York: Dell Publishing Group INC, 1976), 32.

<sup>106</sup> *Ibid*, 35.



Empire proper, controlling everywhere else. This fracturing of the state revealed that the sheer size of the Empire was the fundamental problem. It shaped the political and military history of the Empire and subsequent civilizations that followed. Even after Emperor Aurelian reunited the three factions into a single Roman Empire, this problem continued to loom over his successors.

### **III. Partition of the Empire**

The ascension of Diocletian to Emperor marked a formal end to the crisis of the third century and the beginning of the Dominate period, where the Emperors ruled more authoritatively and without the guise of the Republic to shield their rule. Diocletian recognized the territorial problems of the Empire, and made a monumental decision to split the Empire into two halves, each ruled by an Emperor (Augustus) and his deputy (Caesar). Although this tetrarchy failed in its application and led to further civil war, it provided an example for later Emperors such as Theodosius I, who split the Empire for a final time in 395 CE and bequeathed each half to his two sons, Honorius in the west and Arcadius in the East. The Empire was split and reunited several times before 395 CE, and when Diocletian came to the position of Emperor, major barbarian incursions had already resumed for the first time since before the beginning of the crisis. Unbeknownst to the Empire at the time, these incursions signaled the beginning of a period that would see renewed necessity to adapt to obstacles using new ideas and would fundamentally change the legions of Rome and its eastern counterpart Constantinople.

### **IV. The Migration Period**

Known as the migration period, this era in Roman history was the catalyst for new ideas and increased the barbarian influence on the Roman army. It was split into two distinct phases. The first and arguably more devastating phase was between 300

to 500 CE, and the second between 500 to 700 CE, which later affected the eastern Empire.<sup>107</sup> Modern theories range from climate change to continual wars in central Asia, which forced a nomadic tribe, the Huns, to migrate westwards, pushing the Avars, Bulgars, Alans, and Slavs into Europe sometime in the late third century.<sup>108</sup> Believed to have roots in east Asia, the people that would come to be the Huns started this process and were initially forced westward by other nomadic tribes and the forces of Imperial China, who began construction of the Great Wall in protection against these tribes during the late third century BCE. Over the course of centuries, these nomadic people migrated further, collecting other tribes in a snowball effect moving westward into Europe sometime around 370 CE. The late Roman historian Ammianus Marcellinus chronicles the arrival of the Huns in his written history.<sup>109</sup> The Huns crossed the Volga river, the easternmost boundary of Europe located in modern Russia, in 376 CE and systematically pillaged the eastern Germanic and Slavic inhabitants. With their unknown appearance and hit-and-run fighting tactics, the frightened peoples of eastern Europe and central Asia moved west, crossing into Roman territory. One of the most well-known of these groups were the Visigoths. This group had a direct role in the partition of Empire into two halves and aided in the fall of the western Empire. Moving down from Scandinavia and settling north over the Black Sea, the Goths were one of the first eastern Germanic peoples who came into contact with the Huns when crossing the Volga river in 376 CE. Faced with the

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<sup>107</sup> Patrick Geary, *Myth of Nations* (New York: Princeton University Press, 2003), 24.

<sup>108</sup> *Ibid*, 30.

<sup>109</sup> Ammianus Marcellinus, *The Later Roman Empire: AD 354-378* (New York: Penguin Publishing, 2004), 410.

threat of subjugation and cruel treatment by the marauding Huns, many of the Goths decided to migrate westwards and down into the Balkan peninsula, putting them in contact with the eastern half of the Roman Empire. The Goths who decided to leave would later be referred to as the Visigoths, or 'western Goths', while those who decided to stay and face the Huns would be called the Ostrogoths, or 'eastern Goths'.<sup>110</sup> After fleeing from their homeland, the Visigoths asked the Eastern Roman Emperor at the time, Valens, for sanctuary south of the Danube river. According to Ammianus, once Valens granted their request, the Visigoths soon revolted in 378 CE due to harsh treatment by regional commanders Lupicinus and Maximus which included heavy taxation and unprovoked persecution. Moving their way down the Balkan peninsula, the Gothic War (378 - 382 CE), as it would be called, culminated in the battle of Adrianople. The third largest city in the Empire at this time next to Rome and Constantinople, Adrianople was besieged by the Goths in 378 CE killing the Emperor Valens in the process. They continued down into Greece, pillaging major cities along the way before turning around and slowly making their way towards the western half of the Empire. The battle of Adrianople affected the future of both halves of the Empire for centuries to come. After the death of Valens and Valentinian, a name shared by his brother and his nephew, who both ruled the Western Empire, the Roman Empire was reunited one last time under Theodosius I. The weakness of the Empire became evident after this battle, as European barbarians increasingly crossed their borders. This weakness was further supplemented by the famous sack of Rome in 410 CE by the wandering Visigoths, the first time the city had been sacked in 800 years. This shocked the citizens of the Empire and cemented the resolve of the

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<sup>110</sup> Ibid, 413.

barbarians, who proved that Rome was no longer invincible. Indeed, the strengths and weaknesses of the Roman army had become apparent to many barbarian peoples, even before the migration period.

### **V. Barbarian Adaptation to Stagnated Roman Military Practices**

The stagnation of Roman military organization and practices during the Pax Romana allowed the Germanic peoples along the frontier borders of the Empire to adapt to the Roman style of warfare that had remained constant since the Marian reforms. During the Dominate, guerrilla tactics were favoured by barbarians on the frontiers where small hit and run tactics were heavily employed.<sup>111</sup> This was an attack strategy the Roman armies were not equipped to counteract. The strength of the Roman military was in close-quarters combat with sizable armies numbering in the thousands. This strength allowed Rome to expand into the tribal areas of Gaul, Britannia and parts of Germania, where the warriors there fought in head-on assaults, trying to overwhelm their enemies by superior numbers.<sup>112</sup> Over the course of the Principate, the failure of this combat tactic against the strength of Rome became evident to the barbarians on the frontiers. Realizing the relatively slow nature of Roman military deployment, the barbarians opted for small, rapid attacks that would give them time to inflict damage from a distance before the Romans could organize, while keeping clear of close-quarters combat.<sup>113</sup> With their survival threatened, the Romans instituted a significant number of changes in their military that firmly separated it from the army of the Principate.

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<sup>111</sup> Elton, *Warfare in Roman Europe*, 56.

<sup>112</sup> *Ibid*, 60.

<sup>113</sup> *Ibid*, 63.

## **B. The Army of the Late Roman Empire**

The Emperor Diocletian was the first to make necessary changes to the Roman military as a result. Although slight adaptations had begun under the Severian dynasty, the introduction of new peoples into Roman territory increased the necessity of change just as it had during the Republican period. The difference was through these adaptations. The Roman military resembled the barbarian forces which they fought against, whereas before they were able to add new ideas onto the existing Roman structure. Once he came to power, Diocletian implemented reforms that affected all aspects of the military. The hierarchy of provincial and military command was altered. The size of the entire Roman army and individual legions changed as more barbarians were crossing over into Roman territory. The offensive and defensive strategies of the military changed drastically from the Principate. The change in strategies also affected the nature of fortifications in both halves of the late Roman Empire. The various adaptations that constituted the late Roman army remained in place in the Western Roman Empire until its collapse in 476 CE, in the Eastern Roman Empire (with slight modifications) until c. 611 BCE, when the Emperor Heraclius instituted military reforms, creating the Medieval Byzantine army, which lost all resemblance to the ancient Roman army.

### **I. Military and Provincial Hierarchy**

Leading up to and during the Severian dynasty, when Septimius Severus became Emperor in 193 CE, the top command ranks and the auxiliary of the Roman legions were increasingly being occupied by the equestrian class rather than the traditional senatorial class made up of the Italian aristocracy. By this time, the equestrians were made from ordinary soldiers who earned both rank and fortune over time. Septimius even gave command of three legions to the *primipilari*, chief

centurions of the legion who had distinguished themselves in battle. During the crisis of the third century, the Emperor Gallienus extended this leadership of the *primipilari* to all legions, giving them the title *praefectus pro legato* (prefects acting as legate). This change in traditional military leadership led to the crisis of the third century due to the increased number of experienced, ambitious generals. In this time period, the role of the praetorian guard in the assassination and appointment of Emperors based on favor was well known. Although Constantine abolished the guard due to this very reason, Emperors beginning with Septimius redirected additional troops separate from the 10,000 praetorian guards who were loyal and could be counted on to protect them from internal and external threats.<sup>114</sup> Called the *Comitatus*, meaning escort, these troops were stationed in Italy (the first since Augustus) and increased in number over the centuries, starting at 17 000, with 15 000 infantry and 2000 cavalry made of allies from outside the Empire's borders. By the time Constantine became Emperor, they number at about 100 000, roughly one quarter of the Empire's reserves.<sup>115</sup> They took on an even stronger role in both the eastern and western halves of the Empire after Constantine disbanded the praetorians upon his appointment as Emperor. His successors established permanent *Comitati* across several provinces and kept a force of them in close proximity when they travelled through the Empire. During the crisis, the senior officer was given the title of *dux* and was responsible for the cavalry units of the *Comitati*, corresponding to the Medieval political title of duke. This later came to signify infantry commanders along the frontiers. The *Comes Rei Militaris* was put

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<sup>114</sup> Lim, *Late Antiquity*, 78.

<sup>115</sup> *Ibid*, 81.

in charge of their infantry with the eastern equivalent being *Magister Militum Praesentalis* when the Empire split in 395 CE.

As for troop recruitment, during the Principate the standard pay of a soldier proved to be sufficient considering it was on a primarily voluntary basis. One of the consequences of the crisis and a problem that slowly progressed since the Julio-Claudian dynasty was the near collapse of the monetary system. This was a result of the debasement of coins such as the *denari* which had increased amounts of copper mixed into them. The salaries of soldiers dropped significantly in value by the time Diocletian came to power, and food prices rose to the point where it reduced the recruits of the army to subsistence-level existence. For the first time since the middle Republic, Roman soldiers were expected to farm when they were not on active duty to ensure they could sustain themselves<sup>116</sup> This marked a slow decline in the military professionalism of the legions, where being a full time soldier could not sufficiently fulfill basic necessities. Voluntary recruitment in the army slowed on account of this, and so conscription was put in heavy use again the first time since the Republic.<sup>117</sup> In order to stem rebellion and political corruption in this time of great change, the Emperor Diocletian instituted a number of reforms in the provinces on both military and political levels. First, he separated the provinces into 120 divisions, nearly triple the number there was during the Principate. Next, he separated the civil and military command structure of the provinces, adding to the existing chain of command. The 120 provinces were arranged into groups of twelve, called *dioceses*, which were led by a *vicarius*, essentially a governor of the provincial governors. The *vicarii* were

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<sup>116</sup> Elton, 65.

<sup>117</sup> Elton, 73.

grouped into four and was referred to as *praetorian prefecture*. Each prefecture was organized to fit into the corresponding zones of influence of each tetrarch, designed to mimic that political structure. Accompanying each *vicarius* was a chief-of-staff called a *praefectus praetorio* (not to be confused with the commanders of the praetorian guard who held the same title). In his reformation of the provincial structure, Diocletian split the civil and military responsibilities of the frontier provinces. The governors were only allotted administrative responsibilities, while the command of the military fell under senior officers such as the *duces limitis*, the border commanders.<sup>118</sup> The change in administrative organization of the provinces was mirrored in the size and organization of each legion.

## **II. Size of the Army and Individual Legions**

The size of the late Roman army created by Diocletian reflected the events of the migration period when compared to the army of the Principate. Its exact size is debated due to wide ranges of historical estimates, with a low of around 400 000, and a high of 600 000. This suggests that the size of the army fell in the same range as the army of the Principate under Augustus, numbering c. 400 000 – 500 000 at the time of his death. Despite the effects of the plague, the numbers within the army continued to grow because of the recruitment of barbarian groups entering Roman territory during the migration period. The Italian hegemony of the army had thoroughly dissolved at this point in Roman history, and so the distinction between legions and auxilia were administrative.

The barbarians were admitted into the army as *foederati*, another unit separate from the main legionary force. They brought with them new ideas in combat styles

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<sup>118</sup> Goldsworthy, 66.



and developed defensive strategies as the barbarian incursions increased. These new methods and ideas were reflected in the altered size and structure of legions. The late Roman legions changed in the fourth century and were divided into three distinct types based on their position in the Empire. The imperial escort armies were created by Septimius, and based around Rome and later Constantinople upon the split of the Empire. The field legions of each *diocese* kept provinces safe from harm by barbarians and were based around strategically important locations within the interior of the Empire. The reforms introduced by Marius in late second century BCE put the number of each individual legion at around 5500 - 6000 soldiers arranged in ten cohorts. The legions of the Dominate were reduced to about 1000 soldiers per legion, sometimes as low as 500 in some regions.<sup>119</sup> Besides the professional state armies, provincial governors and generals began the recruitment and organization of private citizens into *Bucellarii*, who essentially acted as household troops for the protection of their benefactors.<sup>120</sup> The *cursus honorum* of military rank and title underwent changes after the crisis of the third century. The changes were meant to aid against corruption and dissension within the military by diluting the power of regimental commanders. This was done by creating deputy subordinates who shared some of the responsibility, while simultaneously limiting the amount of control ambitious officers had over their troops. The addition of new officers within the ranks of the legion did not affect functionality of the army, rather it was new ideas gained through barbarian incursions which shaped the tactics of the late Roman legion.

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<sup>119</sup> Buchwald, 80.

<sup>120</sup> Ibid, 82.

### III. Offensive and Defensive Strategies

The modified size and structure of the legion was not simply based on political or economic reasons, but because of the necessity to adapt to changing tactical conditions. Both offensive and defensive strategies were brought on by barbarian incursions in the fourth century. The professional armies of the late Republic and Principate practiced a forward defence strategy against threats to the Empire. The strategy entailed that any threat to the well-being or interests of the Empire should be neutralized in a pre-emptive attack before it reached the border provinces.<sup>121</sup> The amount of training a full-time legionnaire received, along with efficient supply and troop transport allowed for a successful strategy. It kept most hostile threats outside Roman territory for the duration of the Principate and the Pax Romana. The migration period and subsequent barbarian incursions into Roman territory occurred at increasing rates, which eventually led to a gradual, but exclusive, shift from a forward to an in-depth defence strategy in the fourth century.<sup>122</sup> In contrast to a forward defence, an in-depth defence involved the neutralization of enemy forces once they successfully breeched Roman borders. Even though the late Empire practiced in-depth defense, forward defense strategies were still being used. Examples include the military campaigns of Valentinian I across the Rhine and Danube rivers in 375 CE. The incursion of the Huns in the late fourth and into the fifth century was an example of this kind of defensive strategy. After crossing the Volga river in 376 CE, the Huns continually moved into Roman territory until they were pushed back by a combined army of Legions and Visigoth foederati at the battle of the Catalaunian plains near

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<sup>121</sup> Le Bohec, 47.

<sup>122</sup> Gilliver, 51.

Chalons in 451 CE. Situated in modern France, the battle halted the advance of the Huns, now under the leadership of Attila. It was considered the last major military engagement of the Western Roman Empire. The results of the actual battle were inconclusive, with neither side gaining total victory. However, it did manage to turn the Huns around to establish a short-lived kingdom centered around modern Hungary. There were additional factors other than barbarian incursions that caused this drastic shift in defense policy. First was the stagnation of the Empire and military practices during the Pax Romana. With no necessity to fight for survival, complacency set in, the intense training characteristic of the Principate began to fade away, and the routine of fort life made the Romans slow to react.<sup>123</sup> Second, as previously mentioned, barbarian forces from as far back as the first century CE were increasingly accustomed to Roman style infantry warfare. The traditional tribal combat tactic of marching en-masse was used to overwhelm an enemy with pure strength and numbers in a pitched battle. This proved ineffective against legionary combat that was designed to withstand such assaults.<sup>124</sup> Unable to logistically match the organization and training of the Roman infantry, the barbarian forces resorted to hit-and-run tactics. For most of its history, Roman warfare practices were based around traditional infantry combat, where two opposing sides would meet with their armies and fight a decisive battle until one side was thoroughly defeated. The size of individual legions and their compact organization were not designed to deal with frequent rapid attacks. These attacks often occurred by horseback and left no time for any organized response. An example that illustrates this point was the defeat of three entire legions,

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<sup>123</sup> Hildinger, 75.

<sup>124</sup> Ibid, 67.

numbering about 17 000 within the Teutoburg forest in Germany by Arminius in 9 CE, where a guerrilla style ambush caught the Romans by surprise and left them unable to react using traditional warfare.

The altered size of the legions in the late third and early fourth centuries was in response to the change in barbarian tactics and the increased frequency of their incursions in addition to internal economic and political changes within the Empire. The 500-1000 man legions of the Dominate were able to mobilize and organize faster than the 5500 man legions of the Principate. The legions of the Dominate were also able to meet the hit-and-run tactics of the barbarians with much greater efficiency. The role of the cavalry as support for the infantry remained intact during the Dominate and the migration period. The offensive battle tactics of the late Empire were based on traditional principles of the Principate. The key elements of systematic scouting, marching formation, battle array, fortified camping, and siege craft were all followed intact in the late period.<sup>125</sup> One striking difference was that late army practice of avoiding open battle with the enemy if possible, as opposed to seeking the enemy to battle as often and as quickly as possible. The primary concern was the need to minimize casualties. Pitched battles generally resulted in heavy losses of high-grade troops, which could not be easily replaced. This in turn supported the notion that the late army had greater difficulty than the Principate in finding sufficient recruits, especially high-quality recruits.<sup>126</sup> The late army preferred to attack the enemy by stealth or stratagem: ambushes, surprise attacks, harassment and manoeuvres. These methods included isolating the enemy in zones where they could

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<sup>125</sup> Lim, 76.

<sup>126</sup> Le Bohec, 70.

not access supplies and from which they could not escape like mountain passes or river crossings.<sup>127</sup> Whether operating under offensive or defensive strategy, camps and forts played a pivotal role.

#### **IV. Fortifications in the Late Empire**

Due to increased barbarian invasions, the third and fourth centuries underwent greater fortification activity compared to the first and second centuries. Evidence suggests that forts, even the more rudimentary earlier types based on the design of marching-camps, afforded a significant level of protection. An example is the siege of the legionary camp at *Castra Vetera* during the revolt of the Batavi in 69 CE, where 5000 legionaries succeeded in holding out for several months against vastly superior numbers of rebel Batavi and their allies under the renegade auxiliary officer *Civilis*.<sup>128</sup> The latter disposed c. 8000 Roman-trained and equipped auxiliary troops and deployed Roman-style siege engines. Nevertheless, later forts were undoubtedly built to much higher defensive specifications than their second century predecessors. The following features include a deeper (average of 3 m), much wider (average of 10 m) perimeter of ditches (*fossae*) and would flat floors rather than the traditional V-shape.<sup>129</sup> These types of ditches made it difficult to bring siege equipment such as ladders, rams, and other engines to the walls. It also concentrated attackers in an enclosed area where they would be exposed to missile fire from the walls. The walls were also higher (average of 9 m) and thicker (average of 3 m). The walls were made of stone or stone facing with rubble core. The greater the thickness the better it would

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<sup>127</sup> *Ibid*, 73.

<sup>128</sup> Roth, 78.

<sup>129</sup> Brunt, 60.

protect against enemy mining.<sup>130</sup> The height of the walls forced attackers to use scaling-ladders. The parapet of the rampart had crenellations to provide protection from missiles for defenders. The towers were higher (average of 17.5 m), had projecting corners and were arranged in intervals. These would enable missile fire on attackers. Towers were normally round or half-round, and seldom square as the latter were less defensible. Towers would normally be spaced at 30 m (98 ft.) intervals on circuit walls. There were also gate towers, one on each side of the gate projecting out to allow defenders to shoot into the area in front of the entrance. The gates themselves were normally wooden with metal covering plates to prevent destruction by fire, and postern gates were built into towers or near them to allow sorties. Barbarian invasions affected army structure, organization, combat strategies and fort construction. In addition, they also affected the types of armaments used by the late Roman army.

## **V. Weapons and Armor**

From the fourth century onwards, the weapons and armor used by the Roman infantry were influenced by the kinds used earlier by Roman cavalry. The basic equipment of a fourth century foot soldier was similar to that seen in the second century: metal armour cuirass, metal helmet, shield and sword. Evolution took place during the third century to include the adoption of warmer clothing due to increased presence along colder frontier borders. Also, the disappearance of distinctive legionary armour and weapons; the adoption by the infantry of equipment used by the

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<sup>130</sup> Ibid, 63.

cavalry in the earlier period, and the greater use of heavily armoured cavalry known as *cataphracts*.<sup>131</sup>

In the third century, the *lorica segmentata* was discontinued, with mail or scale armor becoming the standard of the second century legions and auxilia. The artistic record shows that in the late Empire soldiers wore metal armour.<sup>132</sup> For example, illustrations showed that the army's *fabricae* (arms factories) were producing mail armour at the end of the fourth century. Tangible examples of both scale armour and large sections of mail were recovered, at Trier and Weiler-La-Tour respectively, within fourth century contexts.<sup>133</sup> Typically, officers wore bronze or iron muscle cuirasses, as in the days of the Principate. The *cataphract* cavalry, from limited pictorial evidence and especially from the description of these troops by Ammianus, seem to have worn specialist forms of armour.<sup>134</sup> In particular, their limbs were protected by laminated defences made up of curved, overlapping metal segments and thin circles of iron plates, fitted to their bodies.

In regards to the helmets, Roman cavalry helmets provided enhanced protection, in the form of wider cheek-guards and deeper neck-guards, for the sides and back of the head as opposed to the infantry helmets. Infantry were less vulnerable in those areas due to their tighter formation when in combat. During the third century, infantry helmets adopted the more protective features of Principate cavalry helmets: cheek-guards were often fastened together over the chin to protect the face, and

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<sup>131</sup> Le Bohec, 81.

<sup>132</sup> Ibid, 85.

<sup>133</sup> Buchwald, 34.

<sup>134</sup> Ammianus Marcellinus, *The Later Roman Empire*, 323.

covered ears, with a slit saved to permit hearing, e.g. the 'Auxiliary E' type or its Niederbieber variant.<sup>135</sup> Cavalry helmets were even more enclosed, e.g. the 'Hedderheim' type, similar to the medieval 'great helm', but at the cost of much reduced vision and hearing. The late third century saw a complete change in helmet design for both the cavalry and infantry. Previous Roman helmet types, based ultimately on Celtic designs, were replaced by new forms derived from helmets developed in the Sassanid Empire. Referred to as the 'ridge helmets', these new helmet types were characterised by a skull constructed from multiple elements united by a medial ridge. They were divided into two sub-groups, the 'Intercisa' and 'Berkasovo' types.<sup>136</sup> The 'Intercisa' design had a two-piece skull that left the face unobstructed and had ear-holes in the joint between the small cheek-guards and bowl to allow for good hearing. It was simpler and cheaper to manufacture, and therefore probably by far the most common type, but structurally weaker and therefore offered less effective protection. The 'Berkasovo' type was a sturdier and protective ridge helmet. This type of helmet typically has 4 to 6 skull elements (and the characteristic vertical skull ridge), a nasal guard, a deep brow piece riveted inside the skull elements and large cheek pieces. This was likely to be the cavalry version, as the cheek pieces lacked ear-holes.

Fundamental shield design also adapted to new tactics in warfare. The legionary *scutum*, a convex rectangular shield, also disappeared during the third century. All troops except archers adopted an oval, or sometimes round shield (*clipeus*). From examples found at Dura and Nydam, shields were of vertical plank

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<sup>135</sup> Goldsworthy, 97.

<sup>136</sup> Ibid, 100.



construction.<sup>137</sup> The planks were glued and faced inside out with painted leather. The edges of the shield were bound with stitched rawhide, which shrank as it dried, improving its structural cohesion. It was also lighter than the edging of copper alloy used in earlier Roman shields.<sup>138</sup> The change in shield design was meant to work in conjunction with changing weapons used in the late Roman army.

The *gladius*, a short stabbing-sword that was designed for close-quarters fighting, was the standard for the infantry of the Principate. This was also phased out during the third century. The infantry adopted the *spatha*, a longer sword that during the earlier centuries was used by the cavalry only.<sup>139</sup> As well, the infantry acquired a heavy thrusting-spear (*hasta*) which became the main close order combat weapon to replace the *gladius*. The *spatha* was too long to be swung comfortably in tight formation (although it could be used to stab). These trends implied a greater emphasis on fighting the enemy at arm's length. Evidence indicates the change allowed the *hasta* to fit through the gaps better than the rectangular *scutum*.<sup>140</sup> This was a stark contrast to combat in the Principate, which emphasised a close-quarters approach. This was the strength of the legion and pointed to the influence of hit-and-run tactics of fourth century barbarians. For the fourth century, there is no archaeological or artistic evidence of the *pugio* (Roman military dagger), which was used until the third century. Fourth century graves yielded short, single-edged knives in conjunction with

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<sup>137</sup> Hildinger, 79.

<sup>138</sup> Goldsworthy, 98.

<sup>139</sup> Le Bohec, 88.

<sup>140</sup> Roth, 46.

military belt fittings.<sup>141</sup> Hand-held throwing projectiles also went through changes during the third century. Late infantrymen often carried half a dozen lead-weighted throwing-darts called *plumbatae* (lead), with an effective range of about 30 m (98 ft.). This was well beyond that of a pilum, again a result of the arm's length combat tactics of combat at the time. The darts were clipped to the back of the shield. The late foot soldier thus had greater missile capability than his predecessors from the Principate, who was usually limited to just two *pila*.<sup>142</sup> Late Roman archers, like those of the Principate, continued to use the recurved composite bow as their principal weapon. Any changes concerning structure, tactics, organization and equipment outlined above remained the standard in both halves of the Empire until after the fall of the Western Empire in 476 CE. This was when the Eastern army underwent gradual change, leading up to the reforms by the Emperor Heraclius c. 611 CE.

## **VI. Changes in the East and Military Reform**

In the Eastern army between the fifth and seventh centuries, the most notable change was in the cavalry, which grew more important during this time. The cavalry of the Eastern Roman Empire came to surpass the infantry in importance during this period, evidenced by the addition of heavy metal body and horse armor, which was expensive to make and maintain in this period. The change in importance was due to the influence of the Sassanid Empire, the closest rival to the Eastern Empire, which emphasised cavalry over infantry in warfare. The weaponry also changed to further accommodate the arm's length combat strategy, as long swords were replaced by even

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<sup>141</sup> Brunt, 69.

<sup>142</sup> Warren Treadgold, *Byzantium and its Army* (New York, Stanford University Press, 1998), 21.

longer lances, and were designed to act as a shock factor.<sup>143</sup> After the reign of Justinian I in the late sixth century, a series of disastrous Emperors succeeded him and most of the territory won by Justinian's conquests fell to various invasions from both the east and west. When Heraclius the younger sailed to Constantinople and deposed the Emperor Phocas in 610 CE, he found the army mired in corruption and idleness due to the lack of continual maintenance. The reforms developed were a complete purge of corrupt military and provincial figures who would hinder his efforts to salvage the Empire.<sup>144</sup> He re-established basic training requirements and exercises, and created a new standard of pay that would require the soldier to equip himself with the basic equipment needed, ending state supply of equipment. At the same time, he also transformed the border armies into civil militias, and kept the main bulk of his army within the Empire to act as a reserve to the militias<sup>145</sup> These changes in army structure and organization, together with the change of the official language from Latin to Greek, removed the last remaining trappings of the old Roman military system. In its place was a completely different Medieval army with no resemblance to Republican or Imperial armies.

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<sup>143</sup> Ibid, 25.

<sup>144</sup> Ibid, 30.

<sup>145</sup> Ibid, 32.

## Conclusion

Through a diachronic analysis, the argued perspective of Roman military adaptation out of necessity for survival through defensive wars is validated. The breakaway from adopted Etrusco-Greek warfare was due to adaptations of weaponry, armor and combat in the form of the maniple system during Rome's first defensive war against the Samnites. As a result of the adaptations made, Rome defeated the Samnites and expanded into central Italy, and later the entire Italian peninsula. The adaptation of the *corvus* to Carthaginian navy allowed Rome to build a navy fleet which turned a sea battle into a land battle. Through this adaptation Rome was able to defeat Carthage and expand into the greater Mediterranean as a by-product. The adaptations constituting the Marian reforms came out of defensive Cimbrian and Jugurthine wars, and the result of the new cohort system was Roman expansion into Gaul by Julius Caesar, Britain by Claudius, and Dacia by Trajan. The Marian reforms were the last adaptations of the Roman military in the late Republic and early Empire. The resulting stagnation and lack of adaptation through defensive wars halted territorial expansion and degraded the army established by Marius. The re-emergence of defensive wars after the crisis of the third century initiated further military adaptation. The difference in this period of Roman history is that adaptation did not result in a by-product of expansion, but slowed the collapse of the Western Roman Empire and ensured the survival of the Eastern Roman Empire. The reformed army of the Dominate was different than that of the Principate in terms size, tactics, as well weapons and armor used. Due to new defensive wars in the east, it was the reforms of the Emperor Heraclius c. 611 CE that changed the Roman army into the Medieval Byzantine army, with no visible resemblance to the armies of the Principate or Dominate.

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