The Armies and Enemies of Imperial Rome

Organization, tactics, dress and weapons. 146 illustrations and 200 shield patterns.

by Phil Barker Illustrated by Ian Heath

Roman, Byzantine, Gallic, British, Pictish, Scots/Irish, German, Dacian, Sarmatian, Frankish, Saxon, Vandal, Visigothic, Ostrogothic, Hunnic, Pontic, Parthian, Armenian, Jewish, Palmyran, Sassanid and Blemye Armies.

150 BC to 600 AD

A WARGAMES RESEARCH GROUP PUBLICATION

FULLY REVISED FOURTH EDITION

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INTRODUCTION

This is one of a series of books on the armies of the ancient and medieval world, intended to provide background information for students of military history, miniature modellers, illustrators, writers and archaeologists. Although its title mentions the Roman Empire, the period covered spans the gap between *Armies of the Macedonian and Punic Wars* and *Armies of the Dark Ages.* It therefore includes the expansionist period of the Roman Republic, Caesar's wars, and Byzantine wars up to the Arab Conquest.

There have been many books on the Roman army; this one differs from the others in tracing its development over seven centuries in relation to the changing threats it faced at various times in different parts of the Empire, and in being slanted towards the soldier, his weapons and dress, his units, tactics and enemies, to the exclusion of all other factors. It contains the first adequate account ever to be published in English of the armies of the 4th and 5th centuries AD. If you wish to know about pay, conditions of service, family life, army medicine, signals and fortresses, you must go to one of the many excellent books already available covering these listed in the bibliography.

That the present format fills a need is shown by the nearly 20,000 copies sold of the three previous editions. This edition differs primarily in being much enlarged. It now includes a number of extracts from ancient works on tactics not previously available in translation, much more information on orders of battle, many new illustrations of warrior types, a summary of the evidence for Roman uniform clothing colours, and a massive number of Roman and barbarian shield patterns.

As with earlier editions and other books of the series, the main sources on which reliance has been placed are monumental evidence, accounts by ancient authors, and archaeological findings. My use of modern authors has been much more cautious. Some have done an excellent job, and have been rewarded with a place in my Bibliography, but unhappily I have found many instances of "proof by assertion" and of academics who treat the conclusions of their fellows as holy writ and substitute a footnote reference to them for independent critical consideration. It has also become apparent that a good historian of a particular period may unknowingly be severely handicapped in military matters by unfamiliarity with the practises of earlier and later periods.

I have obviously placed my own interpretations on much of the evidence and these may not necessarily agree with those you find elsewhere. However, you should bear in mind that Romano-British archaeology is in a continual state of flux, and that excavations such as those of Brian Hobley at the Lunt fort near Coventy, Barry Cunliffe at Portchester, the other Phil Barker at Wroxeter, the Motorway Rescue Groups, Robin Birley at Vindolanda on Hadrians Wall, the finding of the Classis Britannica fort at Dover, and A. H. M. Jones' analysis of the Notitia Dignitatum have upset many previously strongly held ideas, as have H. Russell Robinson's researches into Roman armour. I am also lucky in that I move in archaeological circles and often hear of finds long before publication. All this said, I am no more infallible than the next. Because I hold one view does not necessarily mean that no alternative opinion is tenable — nor that I am necessarily wrong!

Among those who have been especially helpful, I must acknowledge the unstinting aid of Dr. Graham Webster and the late H. Russell Robinson, both of whom generously made unpublished material available for my use, and to Paul McDonnell-Staff for his drawings of Republican and early Imperial shield patterns. Ian Heath too has contributed much more than just the simple redrawing of illustrations, not least by forcing me to expand and improve my books to match his own on medieval warfare.

One last point. It is traditional to translate Roman unit names and ranks into English. This I have not done, as no suitable versions are available for some of those of the later Empire, and it was thought best to be consistent. You will therefore find Legiones not Legions; Cohortes not Cohorts.

Phil Barker
January 1981

SELECT BIBLIOGRAPHY

JOURNALS:

Journal of Roman Studies
Britannia
Published annually by the Society for the Promotion of Roman Studies. *Britannia* has frequent articles on the Roman army.

Slingshot
Bi-monthly journal of the Society of Ancients. Mainly for wargamers but often includes scholarly research on ancient warfare.

ORIGINAL SOURCES:

Caesar, *The Commentaries.*
Plutarch, *Lives.*
Tacitus, *The Histories, The Annals, Agricola, Germania.*
Josephus, *The Jewish War.*
The histories of Appian, Herodian, Dio Cassius, Suetonius, Ammianus Marcellinus, Zosimus and Procopius.
The Vitae Augustae.
Julian, *Orations.*
The military works of Frontinus, Onasander and Vegetius.

All the above are in print, usually in Loeb Classical Library editions with original and translation on facing pages. The works of Arrian, Maurice and Leo are not available in translation but Latin or Greek versions are available in major reference libraries. Seeck's Latin edition of the Notitia Dignitatum is once more available from Minerva of Frankfurt am Main, Germany, but the shield patterns are best studied from the Bodleian Library's colour transparencies. Write to Bodley's Librarian, Oxford, and enquire for film strip 159B. The western shields are on transparencies 67-75 and 79, the eastern on 21-28 and 32-35.

MODERN WORKS:

G. Webster, *The Roman Imperial Army.*
H. Russell Robinson, *The Armour of Imperial Rome, Oriental Armour.*
H. Delbruck, *History of the Art of War.*
J. Carter, *The Battle of Actium.*
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S. Frere, *Britannia.*
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BASIC ROMAN TACTICS AND STRATEGY

There are six surviving tactical manuals of the historical period we are concerned with, only three of which are available in English translations.

Onasander wrote in the early 1st century A.D. and is available in a Loeb translation. Frontinus wrote a manual later in that century which is now lost, but supplemented it with another work *Stratagems* which is available in a Loeb translation. This is an outstanding collection of underhand military tricks to play on an unsuspecting enemy. The next in time are two works by Arrian, Governor of Cappadocia under Hadrian, neither generally available in English. The *Tactics* is a paraphrase of the work by Asclepiodotus which is published by Loeb bound with Onasander, supplemented by an invaluable section on Roman cavalry training and tactics. The *Order of Battle Against the Alans* describes columns of march in enemy territory and battle formations against shock cavalry.

Vegetius has been translated and after being out of print for years is now available in an American edition. He wrote during the reign of Valentinian II or Valentinian III, not that of Valentinian I as this is ruled out by internal evidence. His book is a confused mixture of current practise and previous methods, so must be read with extreme caution, but is still extremely valuable.

Mauricius' *Strategicon* is an early Byzantine work, but offers many insights into previous organisation and tactical methods, including descriptions of drill movements to Latin commands. It is not available in English, but extracts are quoted by Oman in his *Art of War in the Middle Ages,* unfortunately inextricably mixed with material from a later work by Leo.

Luckily, these works are not our sole source for Roman tactics and organisation. A great deal can be culled from surviving contemporary histories, or from contemporary works on such subjects as the building of torsion artillery, building encampments or veterinary practises. A significant contribution is also made by representations of battles in art or heroic poetry and by archaeology.

A reconstruction of Roman military organisation and tactics is therefore just that; an assembly of sometimes ill-fitting bits and pieces from a large number of sources, with inevitable gaps left to be filled with conjecture, new pieces frequently turning up to have room found for them and sometimes being ignored as inconvenient, and pieces being occasionally removed by rival historians with a cackle of derision! The detective story is presently far from complete and there is still plenty of time for others to join in if they should wish to. If so, I have three bits of dearly won experience to pass on to you. Never trust a modern author or translator however eminent, but always check his original sources. A knowledge of military techniques both before and after the period you are dealing with is almost invaluable. Don't assume that a point you have just discovered has never been spotted before or that there are not contrary arguments. That said, you will find little in these pages that is currently actively disputed.

The backbone of the Roman army throughout its varied history was the Legio, a large body of drilled infantry mainly or at times entirely trained for close combat. Its men differed from the close combat infantry of such other nation such as the Greeks, Carthaginians or Macedonians in that their primary weapon was not a long spear or longer pike retained in the hand to thrust, but instead a combination of hand-hurled missiles and sword. At first, the missile weapon was the Pilum, a heavy short ranged weapon hurled just before contact and capable of penetrating armour or sticking in and encumbering an opponent's shield. As time went on, the Pilum was at first supplemented by, then replaced with, lighter and longer ranged weapons. Throughout, the soldiers retained an effective sword, first short, then long, a helmet, body armour and a large shield. The armour varied in type, iron mail being first favoured, then iron plate, then light tough rawhide. The shield changed from oval to a squared-off oval, to rectangular, and then back to oval again. Regardless of the current type of equipment, the soldiers of the Legiones remained a tough, well trained and effective body of fighting men until the very end of the western Roman empire. Suggestions to the contrary are not backed by any historical evidence.

Such troops needed to be supplemented by lighter infantry who could shoot at a greater distance to prevent the Legio being harassed by similar enemy light troops, or who could move fast and freely over difficult terrain such as woods, bogs or steep hill sides that would slow and disorder their heavier comrades. Until after Julius Caesar, such troops were relatively few in numbers and were predominantly armed with long range missile weapons such as bows or slings. These were then supplemented by much larger numbers armed with light dual purpose throwing and thrusting spears plus lighter javelins, who were both more mobile than the soldiers of the Legiones and still capable of holding their own in hand-to-hand combat against most barbarian tribesmen. By the early 1st century A.D., these were organised in auxiliary Cohortes and as well drilled and disciplined as the Legiones. Similar troops continued to exist till the end, many such units gaining elite status similar to that of the best Legiones. Armour however was abandoned in favour of increased mobility and reduced expense. The regular auxiliary Cohortes and the later Auxilia were from time to time supplemented by irregular units fighting in barbarian style, but these in turn tended to become regularised. At some periods, the Legiones themselves contained a proportion of light infantry to provide more intimate support than that available from auxiliaries. During the later Empire, both the Legio and the Auxilium seem to have had a proportion of their own men trained as archers to supplement the still existing specialist archer units.

Cavalry support was also necessary, since infantry skirmishers could not sally out to drive off horsemen shooting from a distance without risking being ridden down by a mounted charge. At some periods, the Legio had a small body of cavalry of its own, but the great majority always had to be found elsewhere. In Julius Caesar's time, cavalry was almost always irregular and provided by such nations as Gauls, Germans or Spaniards. Augustus regularised these bodies in auxiliary Alae, mainly armed with light spears and javelins and protected by mail, helmets and shields. These were sometimes still supplemented by irregulars such as Moorish javelinmen or Asiatic horse archers or other unarmoured skirmishers. The later Empire saw a great increase in cavalry including regular light skirmishers and cataphract lancers with horse and man both heavily armoured. At the very end, large numbers of barbarian irregulars were again being hired and the use of the bow was spreading rapidly.

Support was also available from stone-throwing and bolt-shooting artillery, mainly intended for siege work, but also often taken into the field during the first half of our period. This artillery was an integral part of the Legio until the 4th century and retained the same status when it was then combined into larger groupings. The use of small numbers of elephants was occasionally proposed as late as the 1st century A.D., but they rarely appeared in practise. Camels were used, but for their desert patrolling advantages rather than as horse scarers, a dozen or so being attached to a few selected infantry or cavalry garrison units in desert areas. There were no specialised engineer units, but each Legio contained a selection of craftsmen and could construct turf or stone forts, barracks, roads and wet or dry bridges from its own resources.

The techniques employed by the various arms of the service described above obviously depended on their opponents and the surrounding terrain. Such variations are discussed a little later, but I will first describe the basic battle and march formations.

The basic battle formation was with cavalry on the wings, infantry in the centre. The auxiliary infantry could either be split on either side of the Legiones and so between them and the cavalry, or more usually, form up in front of them. However, if part of the terrain were obviously unsuitable for other troops, the auxiliary infantry would be placed here and the Legiones take the remaining space. Similarly, if the ground on one wing were unsuitable for cavalry, the greater part of the horsemen would be put on the other wing. There were also occasions when a large part of the cavalry was despatched on a very wide outflanking movement out of sight to reappear on the enemy's rear.

All else being equal, the right wing cavalry would be stronger than that on the left and tasked with outflanking the opposing enemy wing and crushing it with a combined flanking and frontal attack. Meanwhile, the left flank cavalry had the combined job of frustrating similar enemy action while still not falling back far enough to expose the infantry. During the later Empire, the cavalry closest to the infantry would be cataphracts, those on the extreme wings horse archers, and the conventional javelin armed cavalry would be in a second line behind them.

While the cavalry wings were struggling to outflank or not be outflanked as the case might be, the infantry centre would also be piling on the pressure, first with missiles, then following immediately with swords. Auxiliary archers might be supporting them with high trajectory overhead volleys to fall on the enemies rear ranks. Ideally, the artillery might have been found positions on hillocks to the rear of each infantry flank and be adding a murderous fire of bolts stoppable by neither armour or shield. After the first clash, the infantry fight might settle down into something rather like a Rugby scrum, swaying forward and back as one side or other gained advantage. Meanwhile, the generals would be watching like hawks for the right moment to send in their reserves to exploit an opening or repair a failure. The commander-in-chief would be behind the junction of the infantry centre and the right flank with a reserve of light infantry and both light and heavy cavalry. The second-in-command would be behind the centre with a reserve of heavy infantry, and the left flank commander would have a reserve of light cavalry and light infantry.

When the enemy finally broke, the Legiones would normally stand firm, leaving the light troops and cavalry to pursue. Half the cavalry would pursue at full speed, the other half follow more slowly in good order to deal with any enemy that rallied. Archers would follow to shoot at any routers that looked like slowing down.

March formations were chosen to provide protection for all parts of the column if it should be attacked while on the march and to enable it to deploy rapidly into battle formation. The simplest way was to have scouts followed by horse archers in front, then half the remaining cavalry, half the auxiliary infantry, next the artillery as it had to be kept well up in order to get into action in time, the Legiones, remaining auxiliary infantry, and finally most of the remaining cavalry, less two units disposed as flank guards. To deploy into battle formation to the front, the column simply wheeled right, then when all units had wheeled, halted and turned left. If the enemy approached too rapidly to allow plenty of time for this manoeuvre, all the cavalry would gallop forward to form a covering line, then retire into their places when no longer needed.

The army might also be called upon to fight at sea. The distinction between naval and land forces was not so rigid in those days and several Legiones in fact originated as scratch collections of marines got together in an emergency. Although sea transport relied entirely on sailing vessels, some of quite respectable size, naval warfare depended on oared galleys. These were quite fast for short periods before the rowers tired, but for long passages organised their oarsmen into relays and made use of sails in favourable winds. The weight and bulk of masts and sails was a disadvantage in rowing combat, so if possible they were landed before battle. The large numbers of rowers and other crew needed to be landed for cooking, water and sleeping, so most expeditions were coast-hopping, which was not the case with sailing cargo ships. This made ocean blockading impractical, so that most battles were off an enemy or friendly shore base.

There had earlier been two rival schools of galley warfare, one relying on ramming and the other on boarding. The increase in the average size of warships had now made boarding dominant. The Romans often supplemented ships' normal marine complement with large numbers of land soldiers. Rowers at this time were always free men and were lightly armed to provide reinforcement if necessary. Various gimmick weapons such as suspending a burning brazier from a pole over the bow and dumping it on an enemy deck, throwing baskets of snakes or scorpions among the rowers and harpooning and hauling in an enemy vessel with an engine launched grapnel were occasionally used. Artillery was often mounted on the larger ships but had to be of the smaller, anti-personnel, types rather than ship-sinkers. The earlier Roman invention of the Corvus, a heavy spiked boarding bridge which could be let fall to spike an enemy deck had long been discarded, as its extra top weight was very dangerous in bad weather.

Ships were often modified to help in the sieges of coastal towns. Two or three could be joined together to mount a tall tower to overlook enemy defences, or to mount large artillery pieces for battery. Single ships might be fitted with special ladders or with a wooden shed to provide cover from missiles for a light artillery piece.

Roman armies made considerable use of field fortifications. They entrenched every night if marching through enemy territory and usually had such a camp behind them to guard the baggage and provide a refuge when they gave battle. All such camps had a standard layout so that each man knew his place. They were rectangular with rounded corners and consisted of a ditch with the soil cast up behind to make a bank, on top of which each soldier planted the stake he carried. These stakes were called Pila Muralia. They were pointed at each

end and had a narrow waist at the centre so that they could be lashed together. They could also be used as missiles if occupying a more permanent fortification. They are probably the reason that the Legionarius is described as carrying two pila, a thick and a thin. The gateways of marching camps were protected by an angled protrusion or a detached section of ditch which made it necessary for attackers to make a double turn. This exposed their flanks to missiles and broke their impetus. The gateways were connected by broad streets between the troops' leather tents. Contrary to traditional opinion, ramparts and ditches were not levelled when the troops moved on. Many of them are still obvious today.

Permanent forts had a similar plan to that of the marching camps, but were generally much smaller. Ditches were deeper and could be double or triple. Ramparts were taller and often constructed of turf blocks. They were topped with a wooden palisade and wooden towers improved the defences of the corners and gateways. Tents were replaced by wooden buildings. The site of a fort was not chosen primarily for its defensive qualities but for its control of communications. Unless attacked by overwhelming numbers, the garrison was supposed to do its fighting outside the fort, so there had to be several gates to allow rapid deployment. As time went on, forts were rebuilt in stone.

Cities and towns were often surrounded by defences. During the later empire strong stone curtain walls with fortified gateways, projecting towers and ditches became almost universal. Much of this survived to be incorporated in medieval fortifications and can be seen today. Some important cities had several concentric rings of defences. Frontier garrison cities sometimes had a military quarter walled off from the rest of the city area by internal fortifications. Defensive artillery was usually concentrated in the towers. During the later empire, field army units were usually billeted on city householders in peace time, rather than in forts of their own. This removed the necessity of leaving part of the strength behind to guard the base. They still paraded daily for training.

The strategy of the late republic can best be described as opportune meddling. The senate or one of its appointees would intervene in the affairs of some foreign state, Rome would be told to mind its own business, would decide that its honour had been impugned, and a brisk little war would be fought, leaving the zone of Roman influence somewhat larger than before. Sometimes the new territory would be governed directly, sometimes Rome would nominate and support a native ruler. Such client kings did not have an easy time, as Rome would keep on interfering. Sooner or later, the heir to the throne would not have mastered the art of intelligent subservience well enough, and his little kingdom would be taken under direct rule. While a client state existed it could be very useful. The king protected his own borders and in doing so protected those of the Romans. The Romans need not spread out troops as border garrisons but merely keep a small field army somewhere handy to keep the king honest.

The chief difference in strategy under the early empire was the greater centralisation of control. The emperor decided whether to go to war or not, and a greedy governor of an outlying province took his life in his hands if he decided on aggressive war for personal agrandisment. Extensions of the empire were rare, and usually took place in response to a recurrent external threat. The surviving client kings were gradually absorbed, and the borders of the empire defined by boundaries such as major rivers, mountain chains, or by continuous walls, ditch and palisade or chains of posts. These boundaries were defended by auxiliary forts, whose garrisons were tasked with continuous patrolling as far forward beyond their post as was practicable and with offensive action against incursions. Further back in reserve were the Legiones, who were only deployed against a major threat. Further back still, the heart of the empire was virtually devoid of troops except for the emperors' guards at Rome. Should an emperor become too unpopular or die without an obvious heir, the commanders of the frontier armies were all too likely to march on Rome and fight for the succession.

The strategy of the later empire was a response to the combination of increased external pressure from the nations outside the empire and the profusion of civil wars over the succession. The system of keeping the troops on the borders fell down when the garrison of one province was defeated. Reinforcements had to be scraped up from the other borders, sometimes whole Legiones but more often parts of different Legiones called Vexillationes. This worked after a fashion if there were only one incursion, but two simultaneous invasions overstretched the system so that whole provinces could be temporarily lost and need a major effort to recover them. The Roman answer was to create a centralised field army in addition to the border garrisons. This could march to the rescue of a threatened province without creating weakness elsewhere. It also

concentrated enough military strength under the emperor's personal control to make rebellion by an outlying commander much less likely to succeed. However, the central field army could take too long to get to the places it was needed, so in time it was supplemented by smaller regional field armies.

Other problems were the time it took for messages to pass from one end of the empire to the other and the amount of administrative work needed to collect enough taxes from an impoverished population to support the enlarged army. It was getting to be too much work for one emperor. A number of expedients were tried with up to four emperors of varied seniority. The final answer was to split the empire into two halves, an eastern and a western. The two emperors usually, but not always, co-operated with each other. The western empire finally disintegrated towards the end of the 5th century A.D., but the eastern empire, now known for some strange reason as the Byzantine empire from the name that their capital of Constantinople had borne two hundred years earlier, went on for another eight centuries, still calling itself Roman.

Roman armies should not be thought of as consisting of Italians. In Caesar's time, the Legionarii were mainly Italian, but Gauls, Spaniards, Pannonians and others quickly joined them and then became the majority. A Legionarius had to be a citizen and went by a latin name, but that does not imply very much about his birth. Non-citizens under the early empire were recruited into auxiliary Cohortes and Alae and received the citizenship on discharge, making their sons eligible for the Legiones. During the later empire, men from outside the empire were often recruited into the Auxilia and cavalry Vexillationes. They quickly became assimilated and several of their descendants rose to a general's rank. Towards the end, many of the western empire's regular troops were recruited from Africa, and it was the loss of those provinces that forced the west to rely on unassimilated barbarians like Goths and Huns to supplement their dwindling regulars.

ROMAN ORGANISATION AND FORMATIONS

THE LATE REPUBLICAN AND EARLY IMPERIAL LEGIONES

Each Legio was made up of 10 Cohortes, all of which were officially 480 strong, except for the most senior Cohors, which had 800 men. This gave a total of 5,120 rank and file. In practise, 4,000 seems to have been the average strength of a Legio, dipping as low as 3,000 after a long hard campaign.

Under the early empire, the two Legiones based in Egypt were commanded by Praefecti Legionis belonging to the equestrian order. All others were commanded by a Legatus Legionis, who was a senator. The commander was assisted by a Praefectus Castrorum, an ex-ranker officer who did not usually go on campaign, instead commanding the rear party that remained behind to man the permanent fortress base, and by 6 Tribuni. The senior of these was a senator designate who would himself command a Legio at a later stage of his career if all went well. The others were equestrians. They functioned as administrative and staff officers, but did not normally command troops.

Each Cohors except the most senior consisted of 6 Centuriae, each commanded by a Centurio assisted by an Optio. The Cohors was commanded by a senior Centurio, who presumably left his own Centuria to his Optia. In addition, each pair of Centuriae was grouped to form a Manipulus, usually considered to have been an administrative rather than a tactical unit at this period. The senior Cohors of the Legio had no Manipuli, but 5 double strength Centuriae. Its commander, the most senior Centurio of the Legio, was known as the Primus Pilus and was extremely influential.

Each Centuria was made up of 10 Contubernia, each Contubernium consisting at this time of a maximum of 8 men including the Decanus in charge.

Each Legio had a standard of its own, the Aquila or eagle. This was in the charge of the senior Cohors. Each of the Cohortes had its own standard, which at this time was a Signum, and each Maniple had a slightly different kind of Signum. If only a minority of the Legio's Cohortes were taking part in a campaign, the Aquila would stay behind with the main body and the detachment would instead carry a Vexillum as its standard. Standard bearers, like officers, musicians and other specialists, were additional to the total of men supplied by the Contubernia.

The Legio had its own artillery. Each Cohors was responsible for a stone-throwing engine and each Centuria for a light bolt-shooter. There were a few specialists to supervise maintenance and training, but most of the crews were provided by the ordinary rank-and-file.

Each Centuria usually fought in 4 ranks, with 3 feet frontage for each file and 6 feet depth for each rank. The number of ranks could be doubled to 8 if extra solidity was required to stop a cavalry charge. In such an event, the first rank would brace themselves with the points of their Pila aimed at the horses chests and the other end against the ground. After throwing their weapons, the rear ranks would close up and press their shields against the preceding ranks' backs to help take the shock. Other formations included the Testudo or tortoise, a tight column with the rear ranks' shields held overhead for protection from missiles, and the wedge, for breaking up an enemy formation by penetrating it. A convenient march formation was an 8 man wide column. This only needed a right wheel, march to the flank, halt, front and double files to become a fighting formation. The usual tactic against infantry was to throw Pila at point-blank range, then quickly draw swords, charge at a jog and push your shield boss in the enemies face, the sword point in his guts. Many of the latin drill commands are preserved in Byzantine manuals.

LEGIONARY CAVALRY AND LIGHT INFANTRY

In Caesar's day, the Legio had no cavalry of its own. At some time between then and the Jewish Revolt of 66 A.D., it acquired 4 Turmae each of 30 cavalrymen, a Decurio in command and a second-in-command. These functioned chiefly as messengers and escorts.

In 66 A.D., the Legio had not acquired any light infantry of its own. We first read of such troops in Arrian's *Order of Battle Against the Alans,* written in the early 2nd century A.D., but a rather mysterious troop type illustrated on Trajan's Column might just represent them. We know nothing of how they fitted into the existing organisation of the Legio, except that they do not seem to have been in addition to the previous strength.

AUXILIARY CAVALRY

Nothing is known of the organisation of the allied cavalry employed by Caesar and his contemporaries of the late republic except that it always appears in multiples of 500 or 1,000. This may reflect the usual barbarian decimal organisation or a precursor of that adopted by Augustus as part of his army reforms.

Following Augustus' reforms, the cavalry Alae of the early empire were mainly of two different sizes. An Ala Quingenaria had 16 Turmae of 30 rank-and-file each, giving a total of 480. An Ala Milliaria had 24 Turmae, giving a total of 720. The Ala Peditata, a very rare form, added an unknown number of infantry Centuriae. Another rarity was the Ala Dromedaria, a few of which helped guard the borders of Egypt. This either consisted entirely of camel riders, or, more probably, added a small number of camel riders to a normal Ala.

All Alae were commanded by a Praefectus Alae. Such a command was the usual peak of an equestrian order officer's career, except for the lucky few who went on to command an Egyptian Legio. It was reached by way of a period as a Tribunus Militum with a Legio, after first commanding auxiliary infantry as a Praefectus Cohortis. Each Turma was commanded by a Decurio and a second-in-command who may have been an Optio. The primary standard of an Ala was a Vexillum, but Signa were also carried, possibly by individual Turmae, possibly by groupings of Turmae. There were also musicians and other supernumaries. Unlike the infantry, officers, standard bearers and musicians fought in the ranks, which accounts for Roman authors including the two officers of the Turma in the strength of 32 that they quote. Presumably any standard bearers or musicians integral to a Turma are already including in its rank-and-file.

We have no definite evidence of any larger or smaller sub-unit in the Ala than the Turma. However, we frequently find an Ala split into halves or the cavalrymen of two part-mounted Cohortes being combined into the equivalent of an Ala. Parallels with Byzantine organisation suggest that the Turma may also have been divided into 3 sub-units of 10 men including a leader.

The basic formation for a Turma was in 2 ranks of 16 files. The minimum frontage per file was 3 feet, opening out as speed increased. The minimum depth per rank was 9 feet, probably increasing to 13½ feet on the march, and with several horses' lengths between the two ranks when charging. The three most common tactics were a charge in line throwing javelins, then turning simultaneously away to the right with shielded sides to the enemy and reforming at a distance; the same but charging home with hand weapons instead of or after throwing; and a galloping circle with each man throwing in turn at his nearest approach. The first kind of attack would need a frontage of 9 feet or so if there was to be room to turn without slowing. The second would require as close a frontage as possible. It might be 3 feet for trot-charging cavalry such as Catafractarii, but would be more like 4 feet for those charging at a gallop. If the enemy broke, half each Alae would pursue at a gallop while the other half followed more slowly as a reserve with fresher horses in case of an enemy rally.

The sort of missile attack favoured by Roman cavalry has been rather unfairly denegrated by modern writers who compare it with the ponderous 16th century caracole. The parallel is far from close. Each Roman cavalryman could throw as many as 20 light javelins in a single attack according to Arrian's cavalry training manual, and this could probably produce a species of "fire shock". The galloping approach could also be easily converted to a charge home if the enemy front crumbled under the impact of the missiles.

Early imperial cavalry often dismounted to fight on foot. When dismounted, their arms and equipment were identical or nearly so to those of auxiliary infantry, and they seem to have fought in an identical manner.

Contrary to received opinion, auxiliary cavalry belonging to an Ala had much the same status as Legionarii. This was not so in the case of the cavalry element of a mixed Cohors. However, the idea that the latter were mounted infantry rather than true cavalry is without foundation and owes its inspiration to a late 19th century controversy as to the future role of cavalry. This postulated a sort of second class cavalry to take over the subsidiary roles of existing cavalry to preserve them for their main function of the battlefield charge. These were to be known as mounted infantry mainly because none of the existing cavalry would accept a second class status. Such troops were used in the Boer and 1914-18 wars, mainly by conversion of part-time Yeomanry cavalry units. Ironically, they made many successful mounted charges!

AUXILIARY INFANTRY

A Cohors Quingenaria had 6 Centuriae and a Cohors Milliaria had 10. A Cohors Equitata added 4 Turmae of cavalry if Quingenaria and 8 Turmae if Milliaria. A Cohors Dromedaria was almost the same as a Cohors Equitata, but added approximately 24 camel riders who were divided between the infantry Centuriae and used for desert patrolling. There is some evidence that the composition of mixed units was sometimes tailored to suit specific posts.

The suggestion first made in the original edition of this book that all Centuriae had an official strength of 80 rank-and-file and all Turmae an establishment of 30 has since become universally accepted by archaeologists and historians. However, since books predating 1972 are still to be found in libraries, it is worth pointing out that previous theories giving these strengths varying with the type of unit are attempts to reconcile figures quoted by the ancient writer Hyginus in his work on castramentation. The most suspicious part of Hyginus' figures, in my opinion, is that he gives a Quingenaria unit exactly 500 men and a Milliary unit exactly 1,000!

A Cohors Quingenaria was usually commanded by a Praefectus Cohortis. However, if it had been honoured by being designated Civium Romanorum, in effect giving it the same same status as the Legiones, it might be commanded by a Tribunus. A Cohors Millaria was usually commanded by a Tribunus. Internal organisation and officering of Centuriae and Turmae was the same as that of their legionary and cavalry equivalents. Standards and musicians were also equivalent. Auxiliary Cohortes did not have any artillery of their own, but the men were trained in its use in garrisons.

Infantry formations and drill were very like those of legionary infantry, the main difference being that auxiliaries were regarded as especially suitable for work in difficult terrain such as in woods or over steep hills. Their training must therefore have emphasised mobility and flexibility rather than rigid formation keeping. Except for those units primarily armed with the bow, they were mainly hand-to-hand fighters, though their lighter missiles, shields and armour would put them them at a disadvantage to Legionarii in that respect.

The Turmae of a Cohors Equitata provided it with a mobile patrolling and striking force when in garrison. If in the field in company with other units, the cavalry would be detached and possibly combined with another such contingent to provide the equivalent of an Ala.

PRAETORIANS

Under the early empire, except for a brief interlude under Vitellius, each Cohors Praetoria had 6 Centuriae, each 80 strong, and 3 Turmae each of 30 cavalry. Sub-division and officering was as for the Cohortes and Turmae of a Legio, except that the Cohors was commanded by a Tribunus Cohortis assisted by 6 Centuriones.

Praetorian cavalry were usually amalgamated into the equivalent of an Ala Milliaria in the field. If insufficient Cohortes were deployed to make this possible, the numbers were sometimes made up with auxiliary cavalry. There was in addition another guard cavalry unit, the Ala Singularis. This was mainly recruited from Germans, was organised as an Ala Milliaria, and was commanded by a Tribunus.

THE FLEET

This was sub-divided into Classes or squadrons, each commanded by a Praefectus Classis and named after its area of responsibility, i.e. Classis Britannica. Each ship, regardless of size, counted as a Centuria Classica and was commanded by a Trierarchus who ranked with a Centurio. Scouting vessels had 1 rower per half room, fighting vessels 2 or 3, flagships up to 6, under the empire. The average size had been much larger earlier, with 5 rowers per half room for most fight ships and up to 10 for flagships, but all rival naval powers had now disappeared, leaving the fleet tasked mainly with logistic support and the suppression of piracy and raiding. All ships were now called Liburnicae. All but the smallest had two oar banks, so that a Trireme or "three" had 2 rowers to each top bank oar, 1 on each lower. There were usually 25 oars per side on each bank. As well as their lightly armed rowers, ships had specialised fighting men called Classiarii or marines, and sailors. Classes were based on great rivers such as the Danube as well as on seaports.

2ND AND 3RD CENTURY MODIFICATIONS

By the reign of Septimius Severus, the official strength of a Cohors had been increased to about 550, though possibly only in the Legiones. This is consistent with the organisation of the Legio described by Vegetius, the Cohortes of which were commanded by Tribuni and consisted of 5 Centuriae, each commanded by a Centurio and containing 10 Contubernia of 10 men including a Decanus. The Cohors standard was now the Draco.

Severus distrusted the senatorial class and tried to remove them from the sphere of military activity, so Legiones were now likely to be commanded by Praefecti Legiones. The last known Legatus occurs under Galienus.

Vegetius confirms that the Legio now contained its own light infantry, and we hear from other sources of large bodies of troops inside the Legiones called Lanciarii, so presumably armed with the auxiliary infantry and cavalry Lancea, a light spear equally suitable for throwing or thrusting, instead of the usual heavy throwing spear. This weapon had earlier been used by generals' infantry escorts, as described by Josephus in his history of the Jewish revolt of 66 to 70 A.D. Arrian had also specified it as the missile weapon for the rear 4 ranks of his 8 rank legionary formation in his *Order of Battle Agains the Alans.* These are are not apparently the same men as the legionary light infantry he mentions earlier in the work. The numbers of Lanciarii quoted in the pay state for Legio II Traiana below below are consistent with there being 2 Centuriae of Lanciarii in each Cohors, presumably replacing heavy Centuriae. Alternatively, we can postulate two light Cohortes replacing two heavy. All a Legio's Lanciarii are often brigaded together and detached on independent missions. There is no indication yet of of archers or other long range missile shooters within the Legio, but the artillery is retained.

Vegetius also quotes a greatly increased strength for the cavalry of the Legio, of 22 Turmae. These are now often known as Equites Promoti and brigaded together for detached service. Such detachments were called Vexillationes, like other legionary detachments, and were to give their name to a new type of cavalry unit of higher status than the old Alae. The increase in legionary cavalry is usually ascribed to Gallienus, but is more likely due to Septimius Severus who had also spent much effort on increasing the amount of cavalry in the army, including the conversion of most Cohortes Equitatae to Alae. Gallienus, however, did do much to increase the proportion of cavalry in the army, and was probably responsible for raising the many new Vexillationes of "Illyrian" type light cavalry with which the Promoti were later to be associated.

Other new types of units were Numeri of border infantry and Cunei of cavalry. The Numerus first appears late in the 1st century in the form of a unit of hired barbarians fighting in their own style and often under their own chieftains. By the mid-2nd century they had become as regular as any other units. Nothing is known of the strength, except that they may be associated with border forts of much less than Cohors size. However, a clue is offered by the later Byzantine units whose title of Arithmos is a direct Greek translation of Numerus. If the parallel holds, a Numerus should be organised into 4 Centuriae. This would make it a reversion to one of the standard units of earlier Hellenic military practise. Cuneus, which means "wedge", might also then derive from Hellenic practise. The standard Hellenic cavalry unit was in fact the equivalent in numbers and organisation of 8 Turmae, and the wedge was its normal formation. The Numerus and Cuneus look very much like the attempt of an emperor with Hellenic sympathies to make border defence more cost effective by tailoring garrison size to local situation. Hadrian seems a prime candidate as the instigator of the final organisation, although Numeri of the old barbarian type were in existence before his reign.

As barbarian pressure mounted, there was an increasing tendency for detachments of Legionarii to be removed from their parent unit and sent to other theatres. These Vexillationes increasingly failed to rejoin, instead turning into independent units. This situation was to be regularised at the start of the 4th century, the new system in turn breaking down during the 5th century.

Septimius Severus may have reconstructed the praetorians on a Cohors Milliaria basis as Vitellius had briefly done in the past. This is still currently disputed.

All the strengths quoted above are of course theoretical. Actual strengths of units from pay records dating from the very end of the 3rd century found in Egypt are as follows

Ala I Iberorum.	367
Equites Sagittarii.	242
Ala II Herculia Dromedariorum.	211
Cohors XI Chamavorum.	524
Equites Promoti of Legio II Traiana	148
Lanciarii of Legio II Traiana	878
Vexillatio of Legio II Traiana	1,109
Vexillatio of Legio III Diocletiana	1,035
Rump of Legio III Diocletiana	1,716
Vexillatio of several Legiones	1,981

THE 4TH AND 5TH CENTURY FIELD ARMIES

Although an embryo central field army had started to be created during the latter part of the 3rd century, it reached its full development with the accession of Constantine I. The most senior units were known as Palatini. There were 5 Vexillationes Palatinae, the first two of which crack cavalry units had belonged to the earlier field army. These were the Comites Sagittarii, Equites Promoti, Equites Cornuti, Equites Brachiati and Equites Batavi. There were 5 Legiones Palatinae, the first of which may go back to Gallienus, and the next two of which were formed by Diocletian. These were the Lanciarii, Ioviani, Herculiani, Divitenses and Tungricani. Finally, there were 10 Auxilia Palatina, all raised by Constantine. These were the Cornuti, Brachiati, Petulantes, Celtae, Heruli, Batavi, Mattiaci, Salii, Regii and Tubantes. In spite of their tribal names, these were all elite disciplined units.

With the passage of time, the Palatini were supplemented by Vexillationes Comitatenses and Legiones Comitatenses, promoted from the border army. Some of these were later further promoted to Palatini. Field army units were sometimes also demoted to border status. When it was desired to transfer a unit temporarily to the field army, it was classed as Pseudocomitatensis. Pseudocomitatenses units were sometimes Legiones, sometimes other infantry or artillery, but never cavalry. There were no Comitatenses equivalents of the Auxilia Palatina, but many more Auxilia Palatina were formed. When a Vexillatio from a border Legio was promoted to be a Legio Comitatensis in its own right, it could take its name from its parent units' number or from its title. For example, one formed from a Legio II Martia might become known either as the "Secundani" or as the "Martianenses". If it had been stationed at the same place for a long time, it might even be called after its station.

Field army Legiones varied between 1,000 and 1,200 strong, like the Vexillationes many of them originated from. They had lost their integral cavalry and artillery, but Vegetius implies and battle accounts tend to confirm that they had a proportion of light infantry and men armed with long range missile weapons, mainly bows. Vegetius suggests that at least a quarter of their men should be archers.

Their internal organisation is obscure, the main clues being an increased number of references to Manipuli or Ordines instead of Centuriae by reliable contemporaries, and the known rates of pay of the officers. The following reconstruction must therefore be taken as conjectural. However, it is consistent with the known facts and no one has queried it since the publication of the first edition eight years ago.

It is postulated that the Legio was commanded by a Tribunus who had passed through the Protectores, a combined staff college and imperial bodyguard, after first serving as a junior officer in the field. He was assisted by a Primicerius, equivalent to the earlier Primus Pilus, an ex-ranker with considerable length of service, but who had not not been picked for the Protectores. The tactical unit was the Ordo, commanded by a Ducenarius. Some commanders of Ordines had superior status, possibly because they had been chosen for the Protectores and were waiting for a vacancy. These had the rank of Senator, which had nothing to do with the senatorial order. Each of the Legio's 6 Ordines consisted of 2 Centuriae. One of these was commanded directly by the Ducenarius, the other by a Centenarius. The commander of each Centuria was assisted by a Biarchus. Each Centuria consisted of 10 Contubernia, each of 10 men including a Semissalis.

The Auxilium had much the same function relative to the Legio as had the earlier auxiliaries. Since its strength varied between 500 and 600, it is logical to postulate that its organisational structure differed from that of the Legio only in having 3 Ordines instead of 6. A few Auxilia consisted entirely of archers. Whether all the others included a proportion of archers is not certain, but battle accounts imply that at least most probably did.

The cavalry Vexillatio started with the same strength as the Auxilium, but was later halved. When Valentinian divided the empire into two for administration, many infantry units were also split into two, each half then being recruited back up to its original strength and then having Seniores or Iuniores tacked on to its title. At first, the Seniores units were probably all in the western half of the empire and the Iuniores in the east, but cross-postings and emergency reinforcements ensured that this did not last long. The cavalry also split, but instead of each half being recruited up again, they remained at 300 strong. The cavalry split may have been at the same time as that of the infantry, or it may have been later under Theodosius. Each can be argued, but on balance I now prefer the former.

The cavalry split will have produced the organisation found in Byzantine manuals. The Vexillatio consists of 3 Ordines, each of 2 Centuriae, each of 5 Decharchiai of 10 men. The command structure is as already described for the infantry.

There is no evidence that regular units of this era were less well trained and disciplined than those of the earlier empire, even when recruited from barbarians. A close reading of the later histories suggests that the army may in fact have been markedly more efficient than that of the earlier empire, especially in relation to the sorts of enemies it now had to meet.

4TH AND 5TH CENTURY BORDER TROOPS

The backbone of the frontier defences remained the old Legiones, backed by a few Vexillationes of good cavalry. The remaining old Alae, Cohortes, Cunei and Numeri, together with a few new Auxilia were regarded as of lower status. Some garrisons no longer had unit titles, but were instead known as Milites, Limites or Gentes. I postulate that the first of these signifies a body of regular infantry markedly smaller than the previous units, the second a sort of irregular home guard, and the last hired barbarians. How close to their original official strengths the old units were is not known. It is usually suggested that border Legiones had been reduced by detachments to around 2,000 men at the most, yet one Legio on the Danube frontier is described in the Notitia as having 5 Cohortes in each of two fortresses, while others elsewhere are responsible for as many as 6 fortresses. It is also quite likely that a number of border Legiones raised after Diocletian may have been of the new small pattern found in the field armies. Troops garrisoning land frontiers were classed as Limitani. Those guarding river frontiers were Ripenses. Legiones and Cohortes retained the old rank structure as also may have the other old style units.

ARTILLERY

Field army Legiones no longer had integral artillery, but the artillery taken from them was used to form specialised units which retained Legio status.

It seems likely that there were originally units of Ballistarii Seniores and Iuniores, but by the 5th century, there were 3 Comitatenses units in the east and none in the west.

These were backed by 2 Pseudocomitatenses units in the east and 1 in the west, formed by collecting together garrison artillery.

All walled cities and fortress seem to have had artillery, not just those with a Legio in garrison.

A Legio Ballistariorum probably consisted of about 1,000 men with 50 pieces, mainly bolt-firing Ballistae and a lesser number of stone-throwing Onagri, possibly supplemented by large two-arm stone-throwers, though this is unlikely.

4TH AND 5TH CENTURY GUARDS UNITS

The Praetorians fought against Constantine, were destroyed at the Battle of the Milvian Bridge, and were never reformed.

In their place, two new types were created.

The most senior were known as Domestici et Protectores. At first these consisted of one Vexillatio of cavalry and one Auxilium of infantry, doubling up when the empire was divided.

These functioned as a staff college as well as a bodyguard. Promising young officers and rankers served in the corps before being promoted to a command, performing their duties under the eye of the Emperor or the Commander-in-Chief. In theory at least, all unit commanders were provided in this way.

An inner guard of 40 men picked for their loyalty rather than as potential leaders bore the brunt of the bodyguard function, and were called Candidati.

The lower layer were called Scholae, and were organised as Vexillationes. There were originally 5 of these, then 5 for each half of the empire, then 5 in the west and 7 in the east.

The western units were:
- Schola Scutariorum Prima
- Schola Scutariorum Secunda
- Schola Armaturarum Seniorum
- Schola Gentilium Seniorum
- Schola Scutariorum Tertia

The eastern units were:
- Schola Scutariorum Prima
- Schola Scutariorum Secunda
- Schola Gentilium Seniorum
- Schola Scutariorum Sagittariorum
- Schola Scutariorum Clibanariorum
- Schola Armaturam Iuniorum
- Schola Gentilium Iuniorum

The Scutarii were light cavalry with large shields, and the Armatureae wore body armour.

The Gentiles were recruited from foreigners.

The Schola Scutariorum Clibanariorum and the Schola Scutariorum Sagittariorum sound unorthodox in the extreme. It is probable that Scutariorum here reflects only guard status and that these two units did not have large shields.

SYMMACHIARII AND FOEDERATI

From the late 1st century A.D. onwards, the Romans made minor use of parties of barbarian warriors who fought in their own native dress under either tribal leaders or attached Roman officers. They served for a term of years, but unlike regular Auxilia, did not receive the citizenship on discharge. From the 4th century on, the practice grew and whole tribes were allowed to immigrate into the empire on condition that they undertook to serve as Foederati. They tended to become less amenable as their proportion of the army grew, and in the end took over the territories of the western empire for themselves. The eastern empire had earlier realised the danger and taken counter measures, so that Byzantine armies of the 6th century contained relatively few foreigners under tribal leaders, mostly Hun and Moorish light cavalry, and known as Ethnikoi.

BARBARIAN NATIONS

These seem to have invariably used a decimal system of organisation, regardless of nationality, units being either 1,000 strong, or a multiple of 100. One exception, more apparent than real, is the Palmyran army, which is probably better thought of as a revolting Roman force as it was organised on the Roman system, and incorporated a number of Roman units.

BYZANTINE ORGANISATION

Many of the 5th century units of the eastern empire continued in existence at least until the mid-6th century, and there is no reason to suppose that internal organisation or strengths altered much. The Palatini and Comitatenses continued to be the backbone of the field army, but were supplemented by two new classes of regular troops called Bucellarii and Foederati. Bucellarii were the personal household troops of prominent generals. They were in general very efficient, were often present in very considerable numbers and seem to have invariably been bow-and-lance cavalry of the currently fashionable time. Foederati were also cavalry, but were the descendants of the barbarian tribes that had entered Roman service with their chieftains during the later 5th century. By the mid-6th century they were often regularised and largely indistinguishable from the other cavalry. The regular cavalry were assisted by unassimilated barbarian light cavalry called Ethnikoi. These were usually light horse archers.

The remaining infantry units were now relegated to a subordinate position. They still went on campaign, but were no longer the arm of decision, often being left behind to hold a camp while the cavalry went ahead to fight. Existing units had been supplemented by new units of archers, of whom the Isaurian units were especially prominent. Many former field army units may have been transformed into static garrisons. Events were to show that the switch to cavalry and the bow had been carried too far and that there was now a desperate lack of close fighting infantry able to stand up to cavalry charges. On at least one occasion this had to be provided by dismounting lancer cavalry.

The border Limitani were still considered to be useful, so much so in fact, that Justinian raised more such troops for the reconquered province of Africa.

The guard units continued to exist but had temporarily deteriorated as fighting units. This caused them to be supplemented by a new unit, the Excubitae.

At the very end of the 6th century, the process had just gone a step further. There were now three large regiments of elite heavy lance-and-bow cavalry, each possibly as much as 6,000 strong. These were the Bucellarii, the Foederati, and the Optimates, the last probably made up of the former Palatini units. Similar large units of cavalry or infantry made up the bulk of the army, probably being known as Comitatenses. The Ethnikoi had not changed. These large units were called Dhoungoi "Throngs" or Mera. Each Dhoungos or Meros consisted of 3 Moirai, and each Moira of a variable number of cavalry Banda or infantry Arithmoi.

The Bandon was commanded by a Tribounos, whose title was soon to change to Comes. It was sub-divided into 3 Hekatontarchia, each of 2 Allaghia, each of 5 Decharchia, each of 10 men. It normally formed up 5 ranks deep. All of these were armed with both lance and bow, but the best lancers were put in the 1st, 2nd and 5th ranks, the best archers in the 3rd and 4th.

The Arithmos was also commanded by a Tribounos. It was sub-divided into 2 Hekatontarchia, each of 2 Allaghia, each of 4 Lochaghiai, each of 16 men. It normally formed up 16 ranks deep if of mixed spearmen and archers, 8 ranks deep if only of archers or other light infantry. In a mixed unit, the first 8 and last 4 ranks were probably spearmen, the rest archers.

The developed form of the Byzantine organisation is dealt with in more detail in Ian Heath's *Armies of the Dark Ages 600-1066,* another book in this series. Its brief appearance here is only to give some indication of the direction in which development was proceeding at the end of the era being dealt with.

ROMAN ORDERS OF BATTLE

Rather than quote average Roman army compositions at various times, I have chosen to give those for particular campaigns so as to demonstrate the amount of variation possible. I should point out now that the information that has come down to us is necessarily incomplete and that even when figures are quoted in ancient sources we are to some extent at the mercy of authors whom we cannot check. That having been said, while I accept that a critical attitude is necessary, I do not approve of those writers of the late 19th and early 20th centuries who discard all ancient figures that seem unreasonable. All too often, later work has shown that it was the modern commentator's lack of knowledge that made them seem unreasonable. Unreliable ancient evidence is in my opinion still better than a modern writer's pure guess. A future historian might well fail to accept that in 1940 a mere half dozen Panzer divisions decisively defeated a French army of a hundred divisions with only minimal losses, yet he would be wrong. Even a Roman politician had to quote figures that could be attempted to be believed.

SULLA AGAINST PONTUS 86 B.C.

Sulla had five Legiones, but by the time he fought at Chaeronea, his total strength was only 15,000 foot and 1,500 cavalry. He may however have been assisted by client kings.

LUCULLUS AGAINST ARMENIA 69 B.C.

Lucullus fought at Tigranocerta with 24 Cohortes of Legionarii totalling 10,000 men, 3,000 Thracian and Gallic cavalry and 2,000 slingers and archers. He left another 6,000 infantry, probably Legionarii, continuing the siege.

CAESAR IN GAUL 58 TO 51 B.C.

For his first battles, Caesar could field 4 veteran and 2 raw Legiones, 4,000 Gallic cavalry and an unknown but probably relatively small number of Numidian and Cretan archers, Numidian javelinmen and Balearic slingers.

For his later battles, he could field 6 veteran and 2 raw Legiones, 4,000 Gallic and 500 German cavalry, and had added 500 German javelinmen to his light infantry.

CAESAR IN BRITAIN 55 TO 54 B.C.

Caesar took two Legiones in 80 ships on his first expedition. A further 18 ships were to have carried cavalry but turned back due to bad weather. He later mentions two ships carrying a total of 300 men. A horse takes up at least as much room as three men, so the total number of cavalry he planned to take could not have been much more than 650. At 150 men per ship, 80 ships could carry 12,000 men. Assuming, possibly rashly, that the Legiones were at full strength, that leaves room for 1,000 light infantry. Some at least of these must have been present, since the landing was covered by archery and slinging.

The second expedition took five Legiones, 2,000 Gallic cavalry and an unknown number of light infantry.

CRASSUS IN PARTHIA 53 B.C.

Crassus invaded Parthia with 7 Legiones, a little less than 4,000 western cavalry of whom 1,000 were picked Gauls, 4,000 light infantry of whom at least 500 were archers, and possibly 6,000 Arab cavalry. 500 cavalry and 5,000 infantry escaped the final disaster, 20,000 men were killed and 10,000 were taken prisoner. The Arabs had deserted earlier. This implies that there were a total of 27,500 Legionarii, or approximately 4,000 per Legio.

CIVIL WARS 50 TO 45 B.C.

At Pharsalus in 48 B.C. Caesar states that he had 22,000 Legionarii in 80 Cohortes in action, another 2 Cohortes guarding his camp and 1,000 cavalry. Slingers and German light infantry are also mentioned. Other ancient authors put his strength at 32,000 Legionarii, say that he had Acarnanian and Aetolian light infantry, and suggest that he may have raised as many as 10,000 cavalry but been unable to transport more than 1,400 to the theatre of operations. His 11 Legiones should have had 110 Cohortes, of which 23 are known to have been detached as garrisons, leaving 5 unaccounted for. One suggestion is that these may have been detached as a second thought to supplement the two holding the camp.

Caesar credits his opponent Pompeius with 36,000 Legionarii in 110 Cohortes, 3,000 archers, 2 Cohortes of slingers and 7,000 cavalry, the latter including at least 600 Gauls, 500 Cappadocians, 500 Thracians, a force of 500 mixed Gauls and Germans from Egypt and 200 Syrian horse archers. The number of Cohortes fits Pompeius' 11 Legiones, but conveniently forgets 7 Cohortes left guarding the camp and 15 in a garrison further back. The Cohortes of both sides are reduced in strength by previous campaigning, but those of Pompeius had had a chance to recruit locally.

At Thapsus in 46 B.C., Caesar with 20,000 Legionarii, 2,000 archers and slingers and 1,200 cavalry fought against a Pompeian army of 28,000 Legionarii, 12,000 Gallic, Spanish and Numidian cavalry, 30 Numidian elephants and large numbers of light infantry. At Munda in 45 B.C., Caesar is said to have had 32,000 Legionarii, 8,000 cavalry and an unknown number of light infantry against a Pompeian force of 44,000 Legionarii, 6,000 cavalry and 6,000 light infantry. It is quite possible that Caesar's account of the relative numbers on the two sides in these battles was slanted in the same way as his account of Pharsalus appears to have been, but the proportions of troop types given are probably reliable.

MARCUS ANTONIUS IN PARTHIA 36 B.C.

Marcus Antonius invaded Parthia with 16 Legiones totalling 60,000 men, 10,000 Gallic and Spanish cavalry, 6,000 Armenian cavalry, 7,000 Armenian infantry, and 30,000 mixed infantry and cavalry of other nations.

His force included enough light infantry slingers and javelinmen to cover all sides when the army was marching in hollow square and to keep the Parthian horse archers at a respectful distance.

GERMANICUS IN GERMANY 14 TO 16 A.D.

In 14 A.D., Germanicus took 12,000 Legionarii drawn from Legio I (later Germanica), Legio V Alaudae, Legio XX Valeria (later Valeria Victrix) and Legio XXI Rapax, 8 Alae of cavalry and 26 Cohortes of auxiliary infantry. Probably 6 Cohortes were provided by each Legio, the remaining 4 staying at home in garrison.

In 15 A.D., Germanicus split his forces. Aulus Caecina demonstrated against one tribe with all 40 Cohortes of the 4 Legiones mentioned above, 5,000 auxiliaries who may have all been infantry and a few bands of friendly Germans. Germanicus himself attacked another tribe with Legio II Augusta, Legio XIII Gemina, Legio XIV Gemina, Legio XVI Gallica and "twice the number of allies". Allies here probably includes auxiliaries rather than just friendly Germans. Later in the campaign, the two forces co-operated in another stroke, Caecina attacking by one land route, all the cavalry under Pedo by another and Germanicus by water. It is not certain whether Germanicus' Legiones had all their Cohortes present. Caecina was attacked after the other forces withdrew and had to improvise cavalry with officers' mounts.

In 16 A.D., the backbone of the force was again provided by the same 8 Legiones. These were supported by 2 Cohortes of praetorians, enough cavalry to both supply an outflanking force and support the main body, horse and foot archers, slingers, artillery, Batavian, Gallic, Vindelician and Raetian auxiliary infantry, and German allies.

THE JEWISH REVOLT 66 TO 70 A.D.

The force with which Cestius first attempted to put down the revolt consisted of the whole of Legio XII Fulminata, 2,000 men (presumably 4 Cohortes) from each of Legio III Cyrenaica and Legio XXII Deiotariana, 6 Cohortes of auxiliary infantry, 4 Alae, 2,000 horse archers and 3,000 foot archers provided by King Antiochus of Commagene, the same number of infantry and a few less cavalry provided by King Agrippa of Judea, and 4,000 men of whom a third were mounted and the majority archers provided by King Soaemus of Emesa.

The army with which Vespasian attempted to avenge the defeat of Cestius included Legio V Macedonica, Legio X Fretensis, Legio XV Appollinaris, 6 Alae, 10 Cohortes Milliariae, 10 Cohortes Equitatae, 1,000 cavalry and 2,000 foot archers from each of King Antiochus, King Agrippa and King Soaemus, and 1,000 cavalry and 5,000 foot, mostly archers, from the Arab King Malchus. Tacitus' account differs from that of Josephus by adding two extra Alae. These could have been provided by grouping the mounted detachments of the Cohortes Equitatae. Josephus estimates the whole force at 60,000 men, which is approximately correct if Legio XII Fulminata and the Vexillationes of Legio III Cyrenaica and Legio XXII Deiotariana were present and all units are assumed to be at full strength. One of the client kings must have provided some cataphract cavalry, as we find dismounted cavalrymen in complete armour assaulting a breached wall carrying long spears.

The army with which Titus besieged Jerusalem had been weakened by the departure of Vexillationes to take Vespasian's part in the civil war of 69 A.D. This probably left him with 6 Cohortes each of Legiones V, X, XII and XV and 2 Cohortes each of Legiones III and XXII. These were brought up to strength by drafts. He retained the auxiliaries and the allied forces were reinforced by a "large force" of heavy infantry from Commagene, including a royal bodyguard "armed in the Macedonian fashion", which might indicate that they were a pike phalanx.

CIVIL WARS 69 A.D.

The only major army of these wars that can be reasonably reconstructed is that with which Vitellius entered Rome. This consisted of 4 Legiones including Legio V Alaudae and Legio XXI Rapax, 8 Vexillationes from other Legiones in Germany and Britain, 12 Alae including the Ala Petriana Milliaria, and 24 Cohortes including Gauls, Britons, Spaniards, Tungrians and 8 of Batavi.

The Othonians defended the approaches to Cremona with Legio I Adiutrix, a Vexillatio of Legio XIII Gemina, 3 Cohortes Praetoriae, 2 Alae Quingenariae, 6 Cohortes of auxiliary infantry and a reserve of 1,000 mixed praetorian and auxiliary cavalry.

The Vitellians defended Gallia Narbonensis with 2 Cohortes of Tungrians, 1 Cohors of Ligurians, 4 Alae of auxiliary cavalry, 8 Alae of Gaulish volunteers, and 500 raw Pannonian infantry.

The Vitellians made considerable use of allied German infantry. The Othonians on one occasion used 2,000 gladiators and on another peasants apparently armed with slings, the latter being more successful.

Vespasian gained the support of a number of other Legiones in addition to those he had commanded in the Jewish war and which had supplied Vexillationes. His general Antonius fought at Cremona with 5 Legiones, 16 Alae, at least 8 Cohortes of auxiliary infantry, German allies and praetorians formerly loyal to Otho and disbanded by Vitellius.

AGRICOLA IN CALEDONIA 84 A.D.

Agricola seems to have used 3 Legiones, Legio II Adiutrix, Legio IX Hispana and Legio XX Valeria Victrix. Hispana is said to have been weaker than the others. We do not know if any Cohortes of Legionarii had been left behind in garrison or detached to secure the line of communications. All the Legiones of the province had provided Vexillationes for a German campaign two years previously, so may have been understrength. The need to garrison communications was reduced by supply from the sea, but it seems to have been normal practise to leave cohorts in the home fortresses. However, Valeria moved into a new fortress at Inchtuthill after the campaign, so may have been present complete. The Legiones were held in reserve at Mons Graupius, all the fighting being done by 3,000 cavalry and 8,000 auxiliary infantry. Tacitus mentions 4 Cohortes of Batavi, 2 Cohortes of Tungri, 4 Alae and the presence of British troops.

It has been suggested that the auxiliary infantry units were Cohortes I, II, III and IV Batavorum Milliaria, Cohortes I and II Tungrorum Milliaria Equitata, and Cohortes I and II Brittonum Milliaria. It has also been suggested that the 4 Alae mentioned as retained temporarily in reserve are additional to the 3,000 cavalry.

TRAJAN IN DACIA 101 TO 106 A.D.

Evidence from literary sources is lacking, but Lino Rossi made an attempt to re reconstruct the Roman order of battle from mainly epigraphic sources. He lists 8 Legiones as present and possibly complete, 2 present as Vexillationes only, and 3 as probably present. He also lists 16 Alae, of which 3 are Milliaria, and 60 Cohortes. Of the Cohortes, 39 are Quingenaria, 4 Quingenaria Equitata, 4 Quingenaria Sagittari, 8 Milliaria, 4 Milliaria Equitata and 1 Milliaria Sagittaria. Some of his conclusions are disputed.

Cohortes Praetoriae, and Spanish, German, British and Moorish Symmachiarii were also present.

CAMPAIGNS OF THE LATER 2ND TO LATER 4TH CENTURIES A.D.

Few of the later Ancient historical writers provide more detail of orders of battle than appear in our short battle accounts. Moorish light cavalry were a success against the Parthians at Nisibis in 217 A.D., and this may have inspired an expansion of similar troops under Gallienus with the institution of the similar "Illyrian" type cavalry who were prominent at Naissus in 268 A.D., Orontes in 272 A.D. and practically all later battles up to the fall of the western empire.

No units other than Legiones are named by historians before Ammianus Marcellinus, who although he does not mention all the units present at battles, often names those that distinguished themselves. At Argentoratum in 357 A.D., Julian's army included a Vexillatio of Catafractarii, a Legio called the Primani, and 4 Auxilia Palatina, the Cornuti, Bracchiati, Batavi and Regi. Also in his army at the time and probably present, were 200 guard cavalry of the Gentiles, at least 3 Vexillationes of light cavalry including 1 of Scutarii and 1 of

Sagittarii, 3 more Auxilia Palatina, the Heruli, Celtae and Petulantes, and a unit of Balistarii. These account for 9,000 at the most of his 13,000 men. The only units mentioned as taking part in Julian's massive Persian campaign of 363 A.D. are 2 Legiones, the Ioviani and Herculiani, and 2 Auxilia, the Iovi and Victores. The Tertiaci are mentioned as a disgraced cavalry unit, but the name is incomplete. They could be Scutarii or Dalmatae. At the disaster of Hadrianopolis in 378 A.D., Domestici, Stablesiani, Promoti, Scutarii and Sagittarii are mentioned as among the cavalry, Lanciarii and Mattiarii as among the Legiones, and the Batavi are the only Auxilium mentioned.

ARMIES OF THE LATE 4TH AND EARLY 5TH CENTURIES A.D.

The Notitia Dignitatum provides us with nearly complete orders of battle for about 420 A.D. in the west and 395 A.D. in the east. Cross-postings have caused some confusion and the same unit can sometimes be found in two locations. The following orders of battle have been selected as examples.

FIELD ARMY OF THE MAGISTER MILITUM INTRA ITALIAM

Main western field army, normally based in Italy.

6 Vexillationes Palatinae:	Comites Seniores. Equites Promoti Seniores. Equites Brachiati Seniores. Equites Cornuti Seniores. Comites Alani. Equites Constantes Valentinianenses Iuniores.	
1 Vexillatio Comitatensis:	Equites Mauri Feroces.	
8 Legiones Palatinae:	Ioviani Seniores. Herculiani Seniores. Divitenses Seniores. Tungrecani Seniores. Pannoniciani Seniores. Moesiaci Seniores. Octavani. Thebaei.	
5 Legiones Comitatenses:	Mattiari Iuniores. Septimani Iuniores. Regii. Germaniciani. Tertia Iulia Alpina.	
21 Auxilia Palatina:	Cornuti Seniores. Brachiati Seniores. Petulantes Seniores. Celtae Seniores. Heruli Seniores. Batavi Seniores. Mattiaci Seniores. Iovii Seniores. Victores Seniores. Cornuti Iuniores.	Leones Iuniores. Exculcatores Seniores. Grati. Sabini. Felices Iuniores. Atecotti Honoriani Iuniores. Brisigavi Iuniores. Mauri Honoriani Iuniores. Galli Victores. Gratianenses Iuniores. Marcomanni.
2 Pseudocomitatenses:	Legio Prima Iulia Alpina. Pontinenses.	

FIELD ARMY OF THE MAGISTER EQUITUM INTRA GALLIAS

Largest western regional field army, stationed in Gaul.

4 Vexillationes Palatinae:	Equites Batavi Seniores.	
	Equites Cornuti Seniores.	
	Equites Batavi Iuniores.	
	Equites Brachiati Iuniores.	
8 Vexillationes Comitatenses:	Equites Honoriani Seniores.	
	Equites Honoriani Taifali Iuniores.	
	Equites Armigeri Seniores.	
	Equites Octavo Dalmatae.	
	Equites Dalmatae Passerentiacenses.	
	Equites Primi Gallicani.	
	Equites Mauri Alites.	
	Equites Constantiaci Feroces.	
1 Legio Palatina:	Lancearii Sabarienses.	
9 Legiones Comitatenses:	Armigeri Defensores Seniores.	
	Lancearii Honoriani Gallicani.	
	Menapii Seniores.	
	Secundani Britones.	
	Ursarienses.	
	Praesidienses.	
	Geminiacenses.	
	Cortoriacenses.	
	Honoriani Felices Gallicani.	
15 Auxilia Palatina:	Mattiaci Iuniores.	Valentinianenses Iuniores.
	Leones Seniores.	Batavi Iuniores.
	Brachiati Iuniores.	Atecotti Honoriani Seniores.
	Salii Seniores.	Sagittarii Nervii Gallicani.
	Gratianenses Seniores.	Iovii Iuniores Gallicani.
	Bructeri.	Mattiaci Iuniores Gallicani.
	Ampsivarii.	Atecotti Iuniores Gallicani.
		Ascarii Honoriani Seniores.
10 Pseudocomitatenses:	Legio Prima Flavia Gallicana Constantia.	
	Martenses.	Legio Prima Flavia Martis.
	Abrincateni.	Superventores Iuniores.
	Defensores Seniores.	Cornacenses.
	Mauri Osismiaci.	Legio Septimani Iuniores.
		Romanenses.

FIELD ARMY OF THE COMES TINGITANIAE

Regional field army stationed in modern Morocco.

3 Vexillationes Comitatenses:	Equites Scutarii Seniores.
	Equites Sagittarii Seniores.
	Equites Cardueni.
2 Legiones Comitatenses:	Secunda Flavia Constantiniana.
	Septimani Iuniores.

2 Auxilia Palatina:	Mauri Tonantes Seniores. Mauri Tonantes Iuniores.

The Comes also controlled 1 Ala and 6 Cohortes of Limitani.

FIELD ARMY OF THE COMES AFRICAE.

Regional field army stationed in modern Tunisia and Algeria.

19 Vexillationes Comitatenses:	Equites Stablesiani Italiciani. Equites Scutarii Seniores. Equites Stablesiani Seniores. Equites Marcomanni. Equites Armigeri Seniores. Equites Sagittarii Clibanarii. Equites Parthi Sagittarii Seniores. Equites Cetrati Seniores. Equites Primo Sagittarii. Equites Secundo Sagittarii. Equites Tertio Sagittarii. Equites Quarto Sagittarii. Equites Parthi Sagittarii Iuniores. Equites Cetrati Iuniores. Equites Promoti Iuniores. Equites Scutarii Iuniores. Equites Honoriani Iuniores. Equites Secundi Scutarii Iuniores. Equites Armigeri Iuniores.

The Comes had no field army infantry, but he controlled 16 minor garrisons of Limitani of less than Cohors size.

FIELD ARMY OF THE COMES BRITANNIAE

Regional field army nominally stationed in Britain. However, it is far from certain that it was so stationed at this time, as many and possibly all of its units are duplicated elsewhere under other commands. There are two possible explanations for this. One is that Constantine III took the Comes' force to the continent, that it was dispersed after his defeat to other commands, but that the units concerned were earmarked to return should Britain be regained. The second is that following the Patrician Constantius' recovery of Gaul, plans were made to extend Imperial authority to Britain, which at that time was being governed independently by a rump of the old Roman administration, and that forces were earmarked for this. It is a fascinating subject for speculation as to what the inhabitants reaction would have been and whether any action was actually taken.

6 Vexillationes Comitatenses:	Equites Catafractarii Iuniores. (Also under Com.Lit.Sax.). Equites Scutarii Aureliaci. (Also Tingis or Africa?). Equites Honoriani Seniores. (Also in Gaul.). Equites Stablesiani. (Also in Africa?). Equites Syria. (One of Equites Sagittarii in Africa or Tingis.). Equites Honoriani Taifali Iuniores. (Also in Gaul.).
2 Legiones Comitatenses:	Primani Iuniores. (Also in Africa as Prima Flavia Pacis.). Secundani Iuniores. (Also in Gaul as Secundani Britones.).
1 Auxilium Palatinum:	Victores Iuniores Britanniciani. (Also in Spain.).

Britain was also defended by 5 Alae, 1 Cuneus, 16 Cohortes and 1 Numerus along Hadrian's Wall under command of the Dux Britanniarum, 3 Vexillationes, 1 Legio and 10 Numeri also under command of the Dux, and 2 Vexillationes, 1 Legio, 1 Cohors, 3 Numeri and 1 smaller unit under the Comes Litoris Saxonici. A number of fortresses known to have been occupied during the late 4th century do not appear in the Notitia. It therefore seems likely to me that the Notitia shows the skeleton garrison of Limitani left behind by Constantine III, it being militarily absurd to suppose that he left no troops to protect his logistic base, train replacements and enforce tax collection. This is partly confirmed by the presence on the continent of units with British titles or named after British fortresses which they must previously have garrisoned.

FIELD ARMY OF THE MAGISTER MILITUM PRAESENTALIS I

This is one of two main eastern field armies. It was normally stationed in Greece in support of the Danube frontier.

5 Vexillationes Palatinae:	Equites Promoti Seniores. Comites Clibanarii. Comites Sagittarii Iuniores. Comites Taifali. Equites Arcades.
7 Vexillationes Comitatenses:	Equites Catafractarii Biturigenses. Equites Armigeri Seniores Gallicani. Equites Quinto Dalmatae. Equites Nono Dalmatae. Equites Primi Scutarii. Equites Promoti Iuniores. Equites Primi Clibanarii Parthi.
6 Legiones Palatinae:	Lanciarii Seniores. Ioviani Iuniores. Herculiani Iuniores. Fortenses. Nervii. Matiarii Iuniores.
18 Auxilia Palatina:	Batavii Seniores. Brachiati Iuniores. Salii. Constantiani. Mattiaci Seniores. Sagittarii Seniores Gallicani. Sagittarii Iuniores Gallicani. Tertii Sagittarii Valentis. Defensores. Raetobarii. Anglevarii. Hiberi. Visi. Felices Honoriani Iuniores. Victores. Primi Theodosiani. Tertii Theodosiani. Felices Theodosiani Isauri.

FIELD ARMY OF THE MAGISTER MILITUM PRAESENTALIS II

The second of the two main eastern field armies. Normally stationed in Asia Minor.

6 Vexillationes Palatinae:	Comites Seniores. Equites Brachiati Iuniores. Equites Batavi Iuniores. Comites Sagittarii Armeni. Equites Persae Clibanarii. Equites Theodosiaci Seniores.

6 Vexillationes Comitatenses:	Equites Catafractarii. Equites Catafractarii Ambianenses. Equites Sexto Dalmatae. Equites Secundi Scutarii. Equites Scutarii. Equites Secundi Clibanarii Parthi.
6 Legiones Palatinae:	Matiarii Seniores. Daci. Scythae. Primani. Undecimani. Lanciarii Iuniores.
16 Auxilia Palatina:	Regii. Cornuti. Tubantes. Constantiniani. Mattiaci Iuniores. Sagittarii Seniores Orientales. Sagittarii Iuniores Orientales. Sagittarii Dominici. Vindices. Bucinobantes. Falchovarii. Tervingi. Felices Theodosiani. Felices Arcadiani Iuniores. Secundi Theodosiani. Quarti Theodosiani.
1 Pseudocomitatensis:	Auxiliarii Sagittarii.

FIELD ARMY OF THE MAGISTER MILITUM PER ORIENTEM

Regional field army normally stationed in Syria.

10 Vexillationes Comitatenses:	Comites Catafractarii Bucellarii Iuniores. Equites Armigeri Seniores Orientales. Equites Tertio Dalmatae. Equites Primi Scutarii Orientales. Equites Secundani Stablesiani. Equites Tertii Stablesiani. Equites Promoti Clibanarii. Equites Quarti Clibanarii Parthi. Equites Primi Sagittarii. Cuneus Equitum Secundorum Clibanariorum Palmirenorum.
9 Legiones Comitatenses:	Quinta Macedonica. Martenses Seniores. Septima Gemina. Decima Gemina. Balistarii Seniores. Prima Flavia Constantia. Secunda Flavia Constantia Thebaeorum. Secunda Felix Valentis Thebaeorum. Prima Flavia Theodosiana.
2 Auxilia Palatina:	Felices Arcadiani Seniores. Felices Honoriani Seniores.

10 Pseudocomitatenses:	Legio Prima Armeniaca. Legio Secunda Armeniaca. Fortenses Auxiliarii. Funditores. Legio Prima Italica. Legio Quarta Italica. Legio Sexta Parthica. Prima Isaura Sagittaria. Balistarii Theodosiaci. Transtigritani.

FRONTIER GARRISONS

These are selected to show the mixes of troops considered appropriate as Limitani or Ripenses in face of different threats. The Rhine frontier had largely collapsed, so cannot be shown, and the British and African Limitani have been dealt with more conveniently above.

The Dux Raetiae had to defend the upper Danube against German tribes.

His cavalry consisted of 3 Vexillationes and 3 Alae. None of these were "Illyrian" type, Sagittarii, Clibanarii or Catafractarii.

He had Legio III Italica split into 5 separate detachments, 6 auxiliary Cohortes, a river flotilla, 1 detachment of Milites and 1 of Gentes.

The Dux Valeriae defended the middle Danube bend against Sarmatians.

His cavalry consisted of 14 Vexillationes and 2 Cunei of "Illyrian" type, 2 Vexillationes of Sagittarii, and 1 Vexillatio and 2 Cunei of conventional types.

He had the headquarters and 5 Cohortes of Legio I Adiutrix, the headquarters and 5 Cohortes of Legio II Adiutrix, 5 other detachments of Legio II Adiutrix, 6 Cohortes and 5 Auxilia of non-legionary infantry , and a river flotilla.

The Dux Moesiae Secundae defended part of the lower Danube against Goths.

His cavalry consisted of 3 Cunei of "Illyrian" and 4 Cunei of conventional cavalry.

He had Legio I Italica and Legio XI Claudia, both split into two parts with 5 Cohortes each, 10 detachments described as Milites, and a river flotilla.

The Dux Mesopotamiae defended a relatively flat area against the Sassanids.

His cavalry consisted of 5 Vexillationes of "Illyrian" cavalry, 4 Vexillationes of Equites Sagittarii Indigenae "local horse archers" and 3 Alae of conventional troops.

Legio I Parthica and Legio II Parthica each garrisoned a single important fortress, and he had 2 Cohortes of auxiliary infantry.

The Dux Armeniae defended a mainly mountainous frontier against the Sassanids.

His cavalry consisted of 2 Vexillationes of Sagittarii and 11 conventional Alae.

He also had Legio XV Apollinaris, Legio XII Fulminata, Legio I Pontica, and 10 Cohortes of auxiliary infantry, including 3 Milliaria and 1 Equitata.

The Dux Arabiae defended a desert frontier against Arab raiders.

His cavalry consisted of 6 Vexillationes of "Illyrian", 2 of Sagittarii Indigenae and 6 conventional Ala.

His infantry consisted of Legio III Cyrenaica, Legio IV Martia, and 5 auxiliary Cohortes, including 1 Milliaria.

The Dux Thebaidos defended upper Egypt from Blemye raids and maintained internal order.

His cavalry consisted of 2 Cunei and 1 Vexillatio of "Illyrian", 3 Vexillationes of Sagittarii Indigenae, 1 Vexillatio and 12 Alae of conventional troops, 1 Ala of Catafractarii and 3 Alae Dromedariorum incorporating a small number of camels for desert patrol.

His infantry included Legio III Diocletiana split between 3 stations, Legio II Flavia Constantia, Legio II Traiana, Legio I Valentiniana, Legio I Maximiana and Legio II Valentiniana at single stations, 10 Cohortes of auxiliary infantry and 1 unit of Milites.

ENEMY ARMIES, THEIR TACTICS AND THE ROMAN RESPONSE

PONTUS

The army of Mithridates the Great, King of Pontus was a direct descendant of that of Alexander the Great, though Mithridates himself was of royal Persian ancestry. His power centre was northern Asia Minor, but his recruiting area extended to the north of the Black Sea and as far as Greece. His cavalry included the Persian and Cappadocian minor nobility of the inland foothills, Black Sea Sarmatians, Skythian horse archers, and Armenian cataphracts and horse archers. His infantry included Greeks from the coast cities of Asia Minor, the Black Sea and mainland Greece, foothill peasants with bows, wild Galatian tribesmen from the hilly centre of Asia Minor, and a pike-phalanx of freed slaves. When his pike-phalanx failed to stand up to Roman Legiones successfully, he replaced it partly with peltast types and partly with imitation Legionarii of his own, trained by Roman exiles. His big speciality was the use of four-horse scythed chariots intended to be driven at speed into an enemy unit to at least break up its formation. On two occasions these worked, but on others they were successfully countered. Those troop types not illustrated later in this book will be found in *Armies of the Macedonian and Punic Wars.*

For his Bithynian campaign of 88 B.C. Mithridates raised 40,000 Cappadocian, Pontic, Skythian and Sarmatian cavalry, 10,0000 Armenian cavalry, 250,000 infantry including 15,000 phalangites but mainly peltasts or lighter and more than likely greatly inflated by the inclusion of camp servants, and 130 scythed chariots.

At Chaeronea in 86 B.C., the Pontic army had 20,000 cavalry, 100,000 infantry including 15,000 phalangites, and 60 chariots.

At Orchomenus in 85 B.C., the Pontics had something under 20,000 cavalry and 80,000 infantry. The slave phalanx had been wiped out in the last battle, so the infantry would have been peltasts, Galatians and archers. A few chariots survived.

In 75 B.C., Mithridates raised 16,000 Pontic, Cappadocian, Sarmatian and Skythian cavalry, 140,000 infantry including 6,000 trained and equipped as Legionarii, and 100 chariots.

In 66 B.C., he had 3,000 cavalry and 36,000 infantry organised into 600 man Cohortes. Some Cohortes were of imitation Legionarii, some of peltasts.

The Romans found that the Mithridatic phalangites fought well but with no better result than had earlier been achieved by other pike phalanxes. Although in theory the phalanx should have a crushing superiority over Legionarii, in no historical battle did it demonstrate this, the invariable result being a slow slogging match that continued until settled by the phalanx falling into disorder or having its flanks exposed and then enveloped. One possible explanation of this is that the initial volley of pila may have broken the impetus that the phalanx needed to roll over its opponents.

The lighter Mithridatic infantry could not stand long against the armoured Romans, though they did their best, even archers taking handfuls of arrows from their quivers and stabbing them at their opponents faces. However, Roman columns rashly entering defiles often suffered badly from javelins and arrows from ambushers on the slopes. A Roman force that lost a battle could not hope to escape easily from such pursuers.

The Pontic imitation Legionarii do not seem to have fought any differently than their opponents, but there were never enough of them to be a decisive factor.

The scythed chariots could be very dangerous if allowed to get up to full speed before they hit. Their biggest success was against the Romans Bithynian allies in 88 B.C., when they charged a pursuing pike phalanx in flank and were immediately supported by charging cavalry and peltasts. At Chaeronea, they broke through a Legio to be destroyed by javelins on the far side. Alternative methods of dealing with them were to countercharge them before they had got up speed or to plant obstacles such as stakes.

Altogether, the part of the Pontic army that gave the Romans most trouble was the cavalry. This was not only far superior in numbers to the Roman cavalry but better in quality. The Armenian cataphracts on one occasion charged through and broke a Legio, and the Roman infantry felt very nervous about facing them without an obstacle such as a ditch in front. The best anwer was to keep the Roman cavalry out of the way of their rivals until an opportunity came to jump on the flank of Pontics already engaged or pursuing. Even so, it was necessary to support the Roman cavalry with Cohortes of Legionarii.

ARMENIA

The native Armenian part of an Armenian army consisted of cataphract cavalry, horse archers, loose formation javelinmen and infantry skirmishers with bow or sling, and these are the sorts of troops that formed the great majority of the army for most of our period. However, when the Romans first fought an Armenian army at Tigranocerta in 69 B.C., the Armenian power had spread to encompass a number of other nations who all sent their contingents. Since that battle proved to be the high water mark of the Armenian kingdom, I will list the army that was mustered.

The army of 69 B.C. included 17,000 cataphracts, probably 18,000 Armenian horse archers, and 20,000 other cavalry, probably including Albanian and Cappadocian javelin light cavalry and Mardian horse archers.

The infantry are said to have included 20,000 archers and slingers, 150,000 other infantry drawn up partly in phalanx and partly in Cohortes, and 35,000 pioneers and other non-combatant servants. The phalangites were presumably from the old Seleucid military settlements now controlled by the Armenian king, and were none too loyal. The Cohortes may have included the 70,000 imitation Legionarii trained by Pontic experts now or later, but most of the infantry must have been Armenian javelinmen, similar Albanians or Iberians with long thrusting spears.

The only troops in this army who the Romans felt like treating with much respect were the cataphracts. At Tigranocerta, the Roman general Lucullus largely ignored the rest of the Armenian army drawn up on the other side of a river, but led his army off to a ford opposite the cataphracts. He ordered his Thracian and Galatian allied cavalry to skirmish with them on the front and flank to distract them while the Legiones seized a hill to their rear preparatory to charging down on them. The Legionarii were ordered not to bother throwing their pila but to close quickly and strike at their enemies' unarmoured thighs. Whether the thighs are those of the riders or their horses is not certain. As it happened, this was unnecessary. The cataphracts, surprised to be approached by an army they thought was marching away and badgered by the Roman allied cavalry, broke before contact and carried the rest of the army away in their flight. Although the cataphracts did not show well here, their successful charge as part of the Pontic army at Chaeronea shows that they could be deadly if allowed to choose the right moment to engage. Lucullus' success at Tigranocerta was because he did not allow them the choice.

GAUL

Gaul was not a nation but a collection of powerful tribes which could be picked off one by one. However, from time to time large combinations formed, the classic case being Vercingetorix' revolt of 52 B.C. A typical strength for a single tribe was 800 cavalry and 10,000 infantry. The proportions could vary widely. For instance, the Nervii used next to no cavalry at all and did most of their fighting in heavily wooded areas, frequently plashing wood edges to form an obstacle by intertwining branches and scrub. Vercingetorix is said to have scraped together 8,000 cavalry and 250,000 foot, but many of the latter are likely to have been of low quality, such as the too young, the elderly, slaves and servants.

The cavalry were provided by the nobles. They were always well mounted, paying high prices for good horses, of which they were very fond. Leaders and the richer men would wear iron mail corselets and most riders would have metal helmets. All would have substantial shields and be armed with javelins, light spears and cutting swords, the latter being of much better quality than those of some of the infantry. They practised a variety of evolutions, their normal attack being a partial charge throwing javelins, then turning or wheeling away if the enemy were not impressed or charging home with spear or sword if they were disordered or shaken. The Romans thought Gauls were quite good cavalry and employed them if they could get them. However, they rarely did well against Germans, who seemed to have a psychological edge over them.

The infantry were provided by the lower classes, who had no say in political matters but had to do what the nobles told them. This did not means that they could not be pretty good warriors, and in fact they were the most important and dangerous part of the army as far as the Romans were concerned. The best equipped infantrymen carried a long stout shield, a bunch of javelins and a long cutting sword designed only for cutting and needing room to swing. Roman historians tell us that the metal of the sword was of poor quality and needed to be straightened with the foot after a few blows. Archaeological finds do not substantiate this, but it is quite probable that at least some of the poorer warriors had swords that would not have satisfied a richer man. A much shorter sword is also known from archaeological finds and may have been at least as common, probably being used by a man whose preferred primary weapon was a short spear. We are told by Roman historians that Gauls were bigger than Romans. Since the lower height limit for legionary recruiting at that time was 5 feet 8 inches modern measure, there must have been many Gauls over 6 feet.

The normal infantry tactic was a yelling rush hurling javelins and following up without checking with hand-to-hand weapons, accompanied by a dreadful din of war horns. Each warrior fought as an individual, using his superior strength to try and batter down the Roman opposite him. Attacks were made at great speed and often from concealment in woods or down a steep slope, the Gauls being able to move much more easily through such terrain than Legionarii. If the attack failed, the warriors would normally ebb away to get their breath, then attack again. Successions of such attacks could be kept up for as long as six hours on occasion.

Skirmishers on foot did not play a major role. A proportion of young lads lacking the weight and stature for close fighting might scout on foot or skirmish with javelins. Slingers were rare. Archers were a little more plentiful and Vercingetorix tried to gather in as many as possible to support his cavalry, but apparently without much success.

Two variations on the normal rank and file were "Soldurii", a chieftain's elite bodyguard of up to 600 men, and Gaesati, fanatic infantry who stripped themselves naked to fight. The best description of Gaesati is from a Celtic invasion of Italy in 224 B.C. mentioned by Polybius. They kept their normal weapons and shields, but wore nothing but gold torques and arm bands. They may have made up as much as a quarter of the army. Since at that time the Gauls were still using chariots, which in the period we are dealing with they did not, the Gaesati may have been tattooed in British fashion.

Gallic towns often occupied hill top sites fortified with timber-laced drystone ramparts. If such a town was not at hand, a camp site on high ground would often be protected by a wagon lager.

The biggest problem for a Roman general fighting Gauls was a lack of suitable cavalry to oppose the Gallic horsemen and a lack of light infantry to scout out woods and defiles and give warning of attack. Rival Gauls were hired as cavalry, but had to be watched carefully least they change sides. Spaniards were a better answer,

being too far from their homes to desert, and German cavalry with their supporting light infantry were better still. The lack of light infantry was never really overcome. Caesar had small numbers of Balearic slingers and Numidian archers, but these very sensibly were not keen on entering woods and narrow places where they would be outclassed as well as outnumbered by more suitably armed javelinmen who could move at least as swiftly.

The Legiones then, had to accept that they were vulnerable to surprise. If they held the initial rush, their daily weapon practise, toughened muscles and rank relief system would slowly give them the upper hand as their opponents tired. However, this advantage was lost when their opponents retired for a breather. A fierce follow-up at that moment would probably have won them the battle, but the Legionarii were not supposed to break ranks and pursue, in case they met fresh enemy having forfeited the advantages normally possessed by regular troops in good order. The lighter infantry that could have pursued effectively with minimal risk did not yet exist.

A lot depended on how much warning the Legiones got. If they had time to throw their pila calmly and coolly at optimum range, they could crumple the attack before it closed, the heavy pila pinning shields together, weighting them down, and often impaling the warrior. They did not always get such warning.

It is not surprising therefore that the Romans made much use of field defences. They not only fortified a camp to protect their baggage, but often remained inside to fight from it, supported by bolt-shooting artillery. As soon as the Gauls' attention was firmly fixed on the face of the camp they were attacking, Cohortes of Legionarii would file out of gateways in the other faces and take the attackers in flank. The Gauls were extremly sensitive to such flank attacks and invariably fled after only a short resistance, carrying their reserves with them. If the Romans were to fight outside the camp, newly raised Legiones of raw troops would not be trusted to stand up to the Gauls in the open, so would be left as a camp garrison.

BRITAIN

Our information on the numerical composition of British armies is very sketchy. Cassivellaunus operated against Caesar in 54 B.C. with a force of 4,000 chariots, having sent the rest of his forces home. The total armed strength of the south-eastern tribes he controlled has been guessed at 80,000 men. Boudica is said to have brought an unlikely 200,000 eastern and midland tribesmen against Suetonius Paulinus in 61 A.D., but warriors' dependants are also known to have been present. If these were included in the total, the fighting strength could have been as low as 50,000. Finally, the Caledones are said to have had 30,000 infantry at Mons Graupius in 84 A.D.

Roman sources agree that the main strength of a British army lay in its infantry. The infantry of the Belgic tribes of the south-east was much like that of their Gallic neighbours, except that the bow does not seem to have been used at all, and slingers were fairly plentiful. The same tactics of sudden rushes from cover are described. The western tribes heavily emphasised the use of the sling. Their fortifications are laid out with sling ranges in mind and large supplies of rounded sling stones have been found stored within them. The westerners do not seem to have been so keen on a stand-up fight as those further east, but to have preferred cutting up isolated detachments with sudden raids. When Caradoc and the Silures did make a stand in 51 A.D., they adopted a defensive position on a steep slope with a fast stream running in front to slow the attack and given them more time for their missiles to take effect. When the obstacles failed to achieve the intended effect, the whole army quickly dispersed, evading pursuit by way of wooded hills on their flanks. A similar position with covered escape routes was adopted at Mons Graupius.

The most spectacular part of a British army was its chariots. These were most popular with the south-eastern, eastern and northern tribes, to a lesser extent with those of the south, south-west and north-west, and possibly not used at all by the Welsh and midland tribes. We have three descriptions of chariots in action. Caesar describes them as starting by driving around, hurling javelins and disordering their opponents by the noise of their wheels and terror of being hit by the horses. He says that they were extremly manoeuvrable even on slopes and that the fighting men sometimes jumped down to fight on foot in support of their own cavalry against enemy cavalry. Tacitus describes the chariots at Mons Graupius as manoeuvring noisily. Dio describes Boudica's chariots as drawn by small swift horses, the crews throwing javelins, and mentions them breaking

up groups of enemy by deliberately running into them. Although the British chariot was not designed for charging into a solid mass of enemy in the same way as the scythed Pontic chariot, I see no reason why it should not be driven into shaken enemy who are likely to break before it, to run down fugitives, or even to charge sacrificially into a group of stubborn foe that are causing problems for a friendly unit.

British cavalry were mounted on the same small swift ponies that Dio describes, and were much lighter in type than Gallic cavalry. Although less able to ride down opponents, they were quite capable of producing a stinging javelin shower, of attacking flanks or pursuing routers, and were ideal for scouting. Their advantages were maximised and their disadvantages minimised by operating in very close co-operation with the chariots. The success of this tactic can be measured by Caesar's patent exasperation when writing about it.

The south-eastern tribes had fortified towns like those of Gaul, but those further away took fortification to a much further degree. If their site was at all accessible, the westerners would protect their fortresses with multiple lines of steep ramparts and deep ditches with elaborately protected gateways. Others were built on the crests of steep hills or on promentories cut-off by banks and ditches. Such hill forts usually had only a single path giving moderately easy entry. Most are protected elsewhere by long steep slopes that take a modern man an hour to climb finishing on his hands and knees and are still topped by a ditch and bank which in those days would have been crowned by a palisade and a lot of unfriendly slingers. Most of the population did not of course live permanently in such places, though they might take refuge there in emergency. Most lived on isolated farms with one or two round houses surrounded by a ditched and banked palisade.

The special problems posed the Romans by the Britons fall neatly under six headings, which are countering chariots, water crossings, taking hill forts, offensive battles, march security and defensive battles.

The answer to British chariots was to have enough good cavalry. Caesar took 2,000 cavalry on his second British expedition, which was not quite enough. They managed to hold their own in pitched battle if closely supported by infantry, but could not protect the Roman foragers and communications against 4,000 roving chariots themselves supported by cavalry.

Claudius was much better supplied in 43 A.D., because it was now the practise to have approximately equal numbers of Legionarii and auxiliaries. He may have had as many as 7,000 cavalry and 13,000 auxiliary infantry. According to Dio, he also took small numbers of elephants and camels. This is often doubted, but is not all that unlikely. Both types of exotic animals frighten and disorder horses and an antiquarian like Claudius would certainly know of this. They might be very useful indeed against chariotry and cavalry, or for that matter against their no doubt incredulous and superstitious owners.

At the Medway crossing, Claudius' general took the precaution of sending an advance raiding party over by night to lame as many as possible of the chariot ponies before the main crossing.

At the battle against Boudica in 61 A.D., Dio tells us that archers were used to counter chariots while Roman cavalry kept the British cavalry occupied. The Britons in turn sent infantry to drive off the archers, and some of the chariots managed to charge home into Roman infantry.

At Mons Graupius in 84 A.D., the Roman cavalry drove off the Caledones' chariots without any aid, possibly because we hear nothing of enemy cavalry at that battle.

Water crossings included the Medway and Thames in 43 A.D. and Mona in 61 A.D. In each case, a frontal crossing supported by artillery was combined with a flanking movement by swimming cavalry out of sight of the defenders.

Hill forts were taken by clearing defenders from a section of rampart or a gate way with artillery that outranged the defenders' slings, then assaulting with a column of Legionarii holding their shields over their heads in testudo formation. Once through the defences they could deploy into a proper fighting line and either attack or await reinforcement. Meanwhile, the auxiliaries could be demonstrating against the other sides of the fortess, distracting some of the defenders and preventing flight.

The main problem in offensive battles was to catch the enemy up. The convention grew up of keeping the Legiones in reserve in a second line while the brunt of the fighting was borne by the auxiliary Cohortes. Since Augustus' reforms, these were now better armed and protected than their opponents, yet still mobile enough to have a better chance of catching an evading Briton than would a Legionarius. The cavalry were to sort out any chariots, then carry out a wide outflanking movement to prevent escape. They were trained to dismount and fight on foot to flush routers or intending ralliers out of woods. The Legiones followed behind in good order, ready to intervene in case of a reverse. Examples of this sort of battle are that against Caradoc and the Silures in 51 A.D. and Mons Graupius in 84 A.D.

The Romans suffered two serious reverses in Britain, both from Legiones being caught on the march. One was in Wales, the other and better known being the ambush of Legio IX Hispana during the Boudica rebellion. The Celtic penchant for surprise charges from cover and the use of chariots to break up solid knots of soldiers attempting to rally must have been a dangerous combination. The best answer would have been careful scouting but this presumes that time is available. The next best thing would have been rigid march discipline with every man ready to fight and the column broken up and spaced out so that it could not all be attacked simultaneously and there would be uninvolved troops ready for an immediate counterattack.

The only defensive battle fought against the Britons by an army rather than by the garrison of a fort was that between the two main opposing armies of the Boudica rebellion. The Romans took up position on a gentle slipe with their rear and flanks protected by dense woods. The Legiones were in the centre, Cohortes on each flank, and the Alae outside them. The British chariots were dealt with as mentioned above, then the Legiones countercharged down the slope pushing the British infantry back while the cavalry enveloped their flanks.

THE EARLY GERMANS

German tribes were much more democratic than those of Gaul. Rich men existed and provided the cavalry, but were treated with moderate respect rather than slavishly obeyed. This attitude carried through to religion, which was much more a matter of social convention than deeply held belief. However, if anything their social cohesion was greater than that of the Gauls. The rights and duties of a freeman were taken seriously and established custom and the opinions of friends and neighbours carried great weight. While treachery was not unknown, German promises were on the whole more reliable than those of Gaulish leaders.

German cavalry did not go in for flashy foreign bred horses as did the Gauls, but preferred their native breed, described by Roman authors as being small, ugly and not especially fast. However, they were kept very fit, given plenty of hard work and were constantly exercised. German cavalry did not go in for the variety of evolutions practised by Gallic cavalry, and were mainly practised in forward movements and turns or wheels to the right that did not expose the riders' unshielded side. They thought any enemy cavalry who used saddles to be effeminate and would always charge them on sight! Their weapons were mainly light spears and javelins. Swords were not universal, but when used were of excellent steel. They were mainly used for cutting. Armour was not very common among Germans, but would have presumably been used rather more by the rich men that made up the cavalry than by the infantry. Helmets were rarer still and probably limited to Chieftains. The proportion of cavalry varied according to the tribes concerned. We read of an army of 120,000 that included 6,000 cavalry, and another of about the same size that had 800 cavalry present and others away raiding.

The effectiveness of the German cavalry was greatly increased by it having an equal number of picked light infantry attached to it in support. These were armed with javelins and shield. They could not stand up to an enemy cavalry charge, but could hurl javelins at enemy charging or being charged by their own cavalry and afterwards envelope their flanks or pass through to hamstring the enemy mounts. In the absence of their light infantry, some of the cavalry might dismount to fight on foot instead. Their horses were trained to stand and wait, even in the thick of a fight.

In addition to these special light infantry attached to the cavalry, there could be quite a lot of others, some armed with javelins, some with bows. The army mentioned above as having 6,000 cavalry had 16,000 of these.

Although the cavalry were quite effective, Roman authors still thought the infantry who made up the vast

majority were the most dangerous. These emphasised determination and co-operation rather than the individual verve of the Gauls and Britons. They were just as big, but fought in close formation and moved more deliberately. They believed that speed in infantry could turn quickly into panic, and that sudden charges and retirements were more appropriate to cavalry and light troops. They thought it no disgrace to retire provided that you afterwards pressed on again, and always tried to carry off their dead and wounded if defeated. Their favourite formation was the wedge. The great majority were armed with several javelins called Framea. They hurled showers of these ahead as they charged, then retained one to thrust with at close quarters. Swords were rare and a shield provided their sole defence. However, some tribes such as the Cherusci and the Batavi had a front rank of men armed instead with long thrusting spears. These were supported by javelins hurled overhead by the rear ranks. German infantry are described as approaching the enemy singing wild songs and brandishing their shields over their heads. They had a specially terrifying warcry called the Barritus. This started with the voice low, then rose changing key to a high pitched yell. The shield was held over the mouth to produce an echo effect.

The Batavi were a German tribe living inside the empire and provided the Romans with large numbers of excellent auxiliaries. In 69 A.D., they took advantage of a series of Roman civil wars to revolt, led by an officer of auxiliaries named Civilis, a giant extrovert with only one eye who distinguished himself from the Romans by proceeding to grow his hair long and dye it bright red. He brought over at least one Ala and four Cohortes who fought against their former masters as regular units under Roman standards alongside a larger number of wild Germans fighting under tribal wild beast standards. He fought a long and clever campaign with a number of successful engagements, especially among his native marshes.

While the Germans were regarded as formidable opponents, they do not seem to have won any pitched battles in open field against the Romans, or called for any special tactical ploys. The famous Roman disaster of the Teutoberger Wald in 9 A.D. occurred when a far from bright Roman general was ambushed while marching in column with a heavy baggage train along forest tracks by his ally! Germanicus' campaigns to revenge the disaster in 14, 15 and 16 A.D. do however emphasise such practises as marching in an order than can easily be transformed into a battle formation, using auxiliary Cohortes to clear woods and expose ambushes, softening up field works with artillery and archery, and the use of cavalry for wide outflanking sweeps.

PARTHIA

The Parthian army was an especially interesting combination of the very heaviest and very lightest types of cavalry. The nobles were cataphract lancers, protected from head to toe in strong metal armour and mounted on big horses which were also completedly armoured in metal except for their legs. They neither needed or carried a shield. Their primary weapon was the 12 feet long Kontos, a heavy lance with a broad heavy head that could penetrate a horse's chest from its weight alone or cut off a man's head. The rest of the cavalry were horse archers, unarmoured, unshielded, armed only with bow and knife, and relying on their horse's speed to keep them out harm's way. The proportions of these could vary greatly. At Carrhae in 53 B.C., there were 1,000 cataphracts to 10,000 horse archers. At Taurus in 39 B.C., a large force of cataphracts was supported by a considerably smaller number of horse archers, while Marcus Antonius was opposed in 36 B.C. by 50,000 horse archers but relatively few cataphracts.

Cataphracts could ride over any cavalry that tried to meet them, but could not usually catch lighter horsemen that threw or shot missiles at them, then evaded their charge by galloping away. However, they were pretty well invulnerable to such missiles. They could not count on breaking steady close formation infantry in sufficient depth, but would probably break them if they were disordered, wearied or demoralised by a long period of shooting by the horse archers.

Horse archers could not be caught by infantry, but could be chased off by light cavalry if there were insufficient cataphracts to protect them. They were at a disadvantage against javelin armed cavalry at short range, because, unlike their opponents, they could not use shields. They could pursue and shoot at cavalry that evaded away from the cataphracts as long as they were careful not to go too far. They could not destroy an infantry force on their own, but could cause a constant trickle of casualties from arrows that were not intercepted by the defenders' shields and in time wear down their morale. A lucky burst of arrows at close range might occasionally produce a weak point that could be exploited by a cataphract charge.

While cataphracts and horse archers always formed the great majority of a Parthian army, other troop types were occasionally used. Small numbers of light infantry with bows were occasionally put into the field if operating in friendly territory, and in 217 A.D., cataphract camels were tried but proved relatively unsuccessful.

The most successful of a large number of Parthian confrontations with Rome was the first one. As with the Germans, the best known battle is the sole Roman disaster, the Carrhae campaign of 53 B.C. The Romans did much better on later occasions, mainly because they learned by their mistakes, but partly because the Parthian balance between cataphracts and horse archers was often less ideal.

The most obvious disadvantage of a Parthian army against Romans was that it was too weak in infantry to operate successfully in mountain or forest country. This was not a great help to Romans invading Parthia, except that they could cut down their vulnerability by going the long way round through Armenia and putting off the inevitable meeting in open country to a later stage of the invasion. However, the Parthians had to be very careful which bits of Roman territory **they** invaded! They also lacked the infantry and artillery to successfully besiege a Roman fortress or city. A related but less obvious disadvantage is that a horse that has been ridden all day has to rest and graze at night. A Parthian night camp was more than once demonstrated to be extremely vulnerable to a Roman night attack. To be safe, the Parthians had to retire a night's infantry march from the Romans each evening. This prevented the close blockade of a city and often meant that they had to spend the next morning looking for a Roman army they had mislaid during the night.

Another well learned lesson was that cavalry should not pursue horse archers too far. A short controlled charge could keep them out of effective range and occasionally net an overconfident straggler. Get out of reach of the main body, and you would be rolled over or forced to flee by cataphracts and shot to pieces by a swarm of quickly reversing horse archers. Another way of keeping the horse archers at a distance was to have a sizeable proportion of missile armed light infantry. Slingers were especially valuable, because they were the only troops that could make much impression on distant cataphracts. A lead slingshot could concuss or bruise the most heavily armoured man.

Formations were also important. Infantry had to be at least eight ranks deep to hold a cataphract charge, and it was essential that the enemy was not allowed into anyone's rear. Luckily, the open terrain that made Parthians dangerous also made it possible for the army to march in a hollow square with the baggage train inside. A close control was necessary, since if the rear face had to turn to meet attack and the front continued to march on, the defensive integrity would be hopelessly compromised Caltrops were a partial answer to cataphract charges. These were small spiked objects so designed that when tossed on the ground one spike was always uppermost. They were especially useful against cataphract camels as camels have soft feet instead of hoofs. Other methods of dealing with cataphracts were developed too late for use against the Parthians, so will be described further on.

THE JEWISH REVOLT

The Jewish rebels of 66 A.D. started with only a minimal amount of military organisation. One of their area commanders, the historian Josephus, tried to put his own forces on a logical footing. He finally disposed of 250 cavalry, a picked bodyguard of 600 infantry, 4,500 full time fighting men with a modicum of drill and training, and 60,000 other infantry of whom only half served at a time. Most of the other leaders seem to have contented themselves with raising large numbers of infantry with little organisation or training and frequently fought each other. A certain amount of illegal weaponry already existed and more was acquired from garrisons that the rebels overcame. Military skills were less easy to acquire. The client king, Herod Agrippa had had a small army of which one unit, the so called "Royal Spearmen" may have been Jewish. His other three units were Thracians, Germans and Gauls respectively. The temple guard must have provided at least a few instructors though.

Although the Jews could soon field large armies, their pitiful lack of cavalry prevented them standing up to the Romans in open battle, and the war quickly became a matter of sieges. The Jewish defenders of the cities fought extremely hard. On two occasions, fanatical garrisons chose suicide rather than surrender.

The majority of the rebel warriors fought as loose formation infantry with javelins, side arms such as a sword or long curved knife, and a long shield. A large minority substituted a bow for javelins and shield, and there were probably also some javelin skirmishers who may have had smaller shields of any of a variety of types. A sprinkling of captured auxiliary equipment was available, but nothing like enough to go round. Probably only officers regularly wore armour. Quantities of captured artillery were put into use. The Jewish gunners were initially very inefficient but improved with practise.

Once the Jews had been penned up in their cities, the Romans took things very slowly and carefully, letting superior artillery and starvation do as much for them as possible. They surrounded the besieged city with entrenchments to hinder sorties or reliefs from outside, bombarded the fortifications with all types of artillery up to very large three talent stone throwers, and built ramps up to the walls, covered by marksmen from wheeled wooden towers. One innovation was the use of fully armoured men with long spears to head an assault. These were probably dismounted cataphracts from the contingents supplied by the client kings of Emesa and Commagene. The client kings also supplied an abundance of archers for keeping the defenders' heads down.

ARABS

These were described by one Roman author as "desirable neither as friends or enemy". This was of course long before the revelation of the Prophet. On their home ground in inter-clan disputes, Arab tribes would field numbers of infantry armed with bow or javelin. Long range raiding parties would all ride on horses or camels. If brought to battle, the camel riders would usually dismount and form up on foot. Raiders would often take up observation positions on high ground, then swoop down "like rapacious kites". They are described as being half nude, clad in dyed cloaks to their loins, so presumably much like the earlier Arabs illustrated in *Armies of the Macedonian and Punic Wars.*

The simplest answer to the question of what to do about Arabs was to hire them. The opposing sides could each hire a different set, in which case they skirmished about having a good time but causing little damage to each other, or, as occasionally happened, both hire the same set, in which case it was more tactful to pretend not to notice. Those commanders who took Arab allies seriously and relied on them to defend a flank invariably suffered for it. Their most useful service was as scouts, but even then they had a tendency to tell you what they thought you would be pleased to hear. The disappearance of your own Arab allies or being joined by those hired by your opponent was however a reliable way of estimating your army's chances. If you lost, you could in any case assume that your own Arabs would either leave for home or join in plundering you. In theory, Arab camel men could have been used to frighten the horses of opposing cavalry, but in practise this was cancelled out by the nervousness induced in the Arabs by the proximity of hostile cavalry.

SARMATIANS

These are summed up by one Roman author as "a nation most accomplished in brigandage", which has inspired the tongue in cheek suggestion that the 6,000 Sarmatian prisoners settled by the Romans at Ribchester may have been the ancestors of the famous border clan of the Armstrongs. Other Roman authors say that "their cavalry is their sole useful force", and that "no people is so cowardly when it comes to fighting on foot, yet when they attack on horse back, few formations can resist them." However, there were several Sarmatian tribes, and it likely that these words apply more closely to the tribes beyond the Danube such as the Rhoxolani or Iazges that the Romans were most in contact with than to the more settled Black Sea Sarmatians and the Alans.

The typical Sarmatian cavalryman carried a 12 feet long Kontos as his primary weapon. He gripped this in two hands, braced it across his thighs and charged at a breakneck gallop. He wore a tough but light armour of horn scales fastened to a linen backing and the horses of the western tribes were usually protected all round by similar armour. His secondary weapons were a light bow and a sword. He did not carry a shield. Although his horse was often armoured, it was rather on the small side. He usually rode a gelding that would be less likely to betray his presence by whinnying.

Some young lads lacking armour and the size to use a lance probably joined home defence armies as light horse archers for scouting. The Alan military system was more like that of the Huns than the other Sarmatians. The nobles were armoured lancers on unarmoured horses, but the mass were unarmoured light cavalry with bow, javelins and shield, as illustrated in Ian Heath's *Armies of the Dark Ages*. They had some infantry with axes.

The Black Sea Sarmatians had settled down to rule a population of agricultural peasants who may have been better fighting material than other tribes' infantry composed mainly of downtrodden servants or slaves. The nobles had apparently given up both horse armour and bow.

The Romans did not like being charged by Sarmatians and would try to take up a good defensive position at least eight ranks deep. They would try to blunt the impetus of the charge with missiles, then brace the front rank to take the shock. Once the Sarmatians were halted, their lack of shields was thought to put them at a disadvantage. The Romans preferred to restrict Sarmatian summer raiding by placing infantry ambushes in woods along their infiltration routes, and to attack their wagon camps during the winter snows when lack of forage and ice underfoot weakened their cavalry.

If a Roman force developed a gap or lost co-ordination, the Sarmatians would immediately exploit it with a charge, then turn to defeat each part in detail. A revealing comment on a Roman general called Victor shows how the Romans thought of the Sarmatians. "Although a Sarmatian by birth, he was prudent and careful."

DACIANS

The Dacians were just as fierce as their Thracian ancestors, of whom it was said by the Greeks that they would conquer the world if they ever stopped fighting each other long enough! However, they had an altogether more advanced culture that carried agriculture, mining including gold, stock raising and architecture to a very respectable level. A population of free farmers was ruled by a king assisted by notables chiefly distinguishable by their wearing hats. Prosperity at home did not prevent them seeking excitement abroad by raiding the Roman side of the Danube. Roman punitive expeditions sent by Domitian in 85 and 87 A.D. ended in disaster, and a third in 88 A.D., although claimed as a victory, ended in the **Romans** giving hostages and paying tribute. When Trajan became emperor in 98 A.D., he started preparations for a major effort. Two long and bitter campaigns from 101 to 102 A.D. and from 105 to 106 A.D. finally led to the incorporation of Dacia as a new Roman province.

Dacia had very few cavalry of its own and these were mere javelin-armed light skirmishers, so had to repair the lack by employing Sarmatian allies from the Roxolani. The majority of Dacian warriors fought on foot in loose formation armed with javelins, shield, and short or long straight swords. A substantial minority were archers, shown on Trajan's Column as using a recurved composite bow. However, the weapon that caught the Roman imagination most was the Falx, a curved scythe blade mounted on a short wooden haft to be wielded with both hands that was quite capable of cutting off a Roman arm or leg with one blow. This seems to have been especially the weapon of the Dacian's Bastarnae allies, recognisable by their skull caps and baggier trousers. Another cause of Roman dread was the Dacian religion. They allegedly worshipped their god Zalmoxis with human sacrifices and believed fervently that a warrior who died in battle automatically went straight to a front row seat in heaven. This raised fanaticism to the point where warriors sometimes suicided rather than surrender.

The Dacians' best ally was the country itself. It was very hilly, densely wooded in places and divided by difficult rivers. Dacian strongholds were built on the steepest and least accessible hills and were well stocked with Roman artillery captured in earlier campaigns with crews trained by Roman prisoners and forced hostages.

Trajan started by improving road communications on his own side of the Danube, bypassing a difficult stretch of the river with a canal, and building two new bridges, fortified on the far side. He intended to launch converging attacks and needed good lateral communications so that he could reinforce either at need.

He collected together as many auxiliary units as possible to help out the Legiones in the difficult Dacian terrain. Still not satisfied with his proportion of lighter troops, he then raised scratch units of barbarian skirmishers to supplement the regulars. The Danube was to be controlled by a squadron of the Roman fleet including small warships as well as transport barges.

Tactical innovations were fewer. The Romans quickly achieved cavalry superiority, the enemy horsemen appearing from a scene on Trajan's Column to have suffered partial disaster crossing an incompletely frozen river or a marsh. The Roman cavalry are pictured pursuing, scouting, dismounting to fight on foot, and on one occasion as a large force galloping to the rescue of an outpost under Dacian attack. Missile support is also emphasised with large numbers of archers and slingers plus light artillery being employed in open battles as well as in attacks on fortifications. The Adam Klissi Tropaeum shows what appears to be special supplementary armour worn by some Legionarii to counter the Falx.

MOORS

Moorish armies normally consisted of large numbers of superb javelin armed light cavalry supported by masses of skirmishing infantry with javelins. Variations at various times included small numbers of skirmishing infantry archers, infantry drilled by Roman advisers into a lighter armed equivalent of Roman auxiliaries, and war elephants. One noteworthy if unsuccessful gimmick used by a Moorish force against a Byzantine was made possible by the spread of the camel to North Africa during the Roman occupation. A body of Moorish infantry surrounded themselves with a ring of tethered camels to frighten the Byzantines' horses. This worked reasonably well — until the armoured cavalry dismounted and attacked on foot. At no time did a Moorish army have much chance of standing up to Romans in a pitched battle, and the main problem they posed was as a raiding guerilla force with a sanctuary in the Atlas mountains.

The successful solution that the Romans finally hit on was to move forward cautiously, often in hollow square, establishing fortified bases to control supply routes and make raiding by small parties dangerous. A Roman might not be able to catch up with a fleeing light cavalryman or a light infantryman bounding up a steep hillside, but the Moors' food supplies and familes in their home villages were a stationary target and one that could not easily be defended.

MOUNTAIN PEOPLES

As well as some of the Moors, this category included Spaniards, Isaurians, Armenians and some of the inhabitants of Wales. All these had common characteristics. They lived in inaccessible hamlets high up unknown mountain valleys, kept goats or sheeps, were mainly armed with javelins, paid no taxes and raided the fertile lowlands as a matter of course.

The Romans first met such enemies in Spain. They learned to charge at full speed and not to halt on the objective but push on beyond it, not to worry too much about maintaining rigid formation, and to pull back quickly after a charge before the enemy had time to get their nerve back and harass the withdrawal. We read nothing in Roman authors reminiscent of the British 19th century practise of picketing key heights along a line of march and withdrawing pickets in turn as the main body passed. The main danger in such tactics was that of losing the picket as it withdrew and Roman artillery did not have the range and lethality of the covering British pack howitzers. However, the benefits of seizing a commanding height uphill of enemy ambush positions is stressed by several histories of earlier times that Roman officers would be familiar with, such as Arrian's *History of Alexander.*

The most dangerous mountain enemy the Romans met were the Isaurians of Asia Minor, whose raids into the lowlands took on the scale of invasions. They are described as ranging widely, sometimes in solid bodies and sometimes in isolated bands. They specialised in rapid night marches to out-pace the news of their coming. Each man had a shield, two or three javelins and a sword. Rash pursuers might be ambushed in narrow defiles, or tempted to pursue them up steep slopes only to find themselves with insufficient room to deploy at the top, in which case they would be countercharged, pushed off the crest and hurried down hill under a hail of boulders. Ammianus describes them "Born and brought up in steep and twisting mountain valleys, they

bounded over hillsides as if on a smooth and level plain, throwing missiles at the enemy from a distance and frightening them with savage howling."

The Romans treated these people with extreme caution. They learned not to pursue rashly into the mountains but to try and catch them on low ground where they were easily overcome. Isaurians were not good at tackling fortifications, and a walled village could hold them up until relieving cavalry arrived. Infantry could catch them fording rivers with their stolen flocks. Sheep cannot be moved at a gallop like cattle, and fast reaction could often recover stolen animals even if the raiders escaped.

The best thing to do with such people was to relieve their population pressure by recruiting them as soldiers. This was especially successful with the Isaurians, who ended by supplying most of the infantry component of the Byzantine army that Belisarius led to recover Italy and North Africa.

PALMYRA

Palmyra was a client state of Rome that controlled the rich trade routes to Arabia, Persia, India and China. When the Sassanid Persians under Shapur invaded Syria in 256 A.D. and captured the unlucky emperor Valerian for use as first a living and then a stuffed mounting block, Odenathus, Prince of Palmyra, took over the defence of the Roman east. He followed up the Persian withdrawal almost to the gates of their capital Ctesiphon, causing them heavy casualties and recovering much of the loot. On returning home, he put down a usurping emperor called Quietus, and was then entrusted with the military command of the east by Gallienus while the emperor was dealing with another usurper in the west. Odenathus took the title of King of Palmyra and set off again to the east. Shapur did not dare face him in battle, but Odenathus equally could not capture Ctesiphon. He retired in good order and on arriving home Gallienus gave him the titles of Imperator and Corrector of All the East. He awarded himself the title of King of Kings, and was assassinated together with his oldest son in 268 A.D., the Romans probably being the chief beneficiaries. His widow, the famous Queen Zenobia, proclaimed herself regent for another son called Vaballathus. Gallienus died, and was followed on the throne in rapid succession by Claudius Gothicus, Quintillus and in 270 A.D. by Aurelian. Zenobia took advantage of the confusion to quietly extend her rule over Roman Egypt, and in 271 A.D. declared Palmyra independent. She took the title of Augusta and had Vaballathus proclaimed Augustus. Aurelian could not accept the loss of the richest half of the empire, so marched to recover it. Two very able rulers and the two most formidable armies of the time were to fight it out.

The Palmyran army was a mainly regular force with irregular help. Its two main arms were the infantry archers that had also been recruited in large numbers into Roman auxiliary Cohortes and super heavy cataphract cavalry similar to that of the Parthians. There appear also to have been a smaller number of regular light cavalry and plenty of amateur archers both mounted and on foot. The army's weakness lay in a lack of heavier infantry. Under Odenathus, and at first under Zenobia, this was compensated by them having the Legiones, Cohorte and Alae of the Roman armies in the east at their command, but these presumably could not have been relied on against Aurelian and mostly changed sides as soon as they conveniently could.

Aurelian first attempted to counter the cataphracts by skirmishing against them with light cavalry, tempting them to charge, then evading them, in the hope of tiring them out, then falling on their flanks. This worked well enough to give Aurelian a points victory in the first great battle near Antioch. It did **not** work again in the second battle at Emesa. This time, when the Roman cavalry retreated, they fell victim to an outflanking movement by the lighter of the numerically superior Palmyran cavalry, and were caught and ridden down by the cataphracts. Unfortunately for the Palmyrans, while this was going on their infantry had been charged and scattered by the Legiones. The cataphracts returning blown after their pursuit were attacked by the victorious Roman infantry, led we are told by giant Palestinians who felled them from their saddles with huge wooden clubs. With both cataphracts and infantry gone, there was nothing for the other cavalry to rally on, so they dispersed.

The remnants were now besieged in Palmyra. When the city was about to fall, Zenobia fled to the Persians on a fast camel as being faster over long distances than a horse. However, she was caught by pursuers who had taken spare horses, walked in Aurelian's triumph, and then ended her life as a fashionable Roman hostess with a pension and a villa.

Aurelian was sufficiently impressed by the performance of the cataphracts to introduce them into Roman service, where they were later greatly expanded by Constantius II.

SASSANID PERSIA

The Sassanid dynasty overthrew and replaced the Parthian dynasty of the Arcacids during the 3rd century A.D., and from then on was the most dangerous rival of the Roman empire. The Sassanid rulers considered themselves the heirs of the Achaemenid kings overthrown by Alexander the Great in 331 B.C. and had a distorted legendary view of history that largely ignored the intervening 600 years, first as irrelevant, then as non-existent. For example, they confused Philip the father of Alexander with the 3rd century A.D. Roman emperor of that name! They claimed all the territories of the Achaemenids at their greatest extent, which would have included most of Greece as well as Asian and African provinces that had been Roman for more than three centuries, and demanded that the Romans return these. This attitude made them much more aggressive than the Parthians had been and they frequently launched powerful invasions of the eastern Roman provinces with on the whole more success than failure. The Roman versus Sassanid wars were finally terminated by the Arab conquests of the 7th century A.D., which absorbed much of the Byzantine territory and all of Persia.

The Sassanid military system was very similar to that of medieval Europe. The only full time military personnel seem to have been four high officers of state responsible for levying and recruitment. The most important part of the army was the noble cavalry, usually called Clibanarii. This means "Baking oven men" in latin, which in that climate might well be appropriate, but originally derives from "Grive-Pan", which is old Persian for "Warrior". Some men were more or less equivalent to the Palmyran, Roman and Parthian cataphract cavalry. Others were rather lighter armoured and had the bow as their primary weapon, although still possessing Kontos. Horse armour was normal. An all-round protection of leather or thick felt was at first favoured, but this was later apparently superseded by partial metal armour in front only. A roll was kept of men obligated to serve. From the 6th century onwards they had to muster to have their equipment inspected, and were then paid while the campaign lasted.

The mass of the infantry were conscripted peasants. There was no nonsense about a roll. Instead, an official went round to the headman of each village, told him how many men were required, took them from whatever they were doing, and marched them off to be issued with cheap spears and shields. Morale was naturally far from high. The spearmen are reported as forming up in very close order, giving an impression of clustering together for mutual comfort. On one occasion they were actually chained by the ankle to prevent them running away. They were mostly brought along as camp labour and for siege work, but were not entirely useless in open battle.

Infantry archers, slingers and javelin-armed skirmishers were more highly regarded. They were almost invariably mercenaries hired from the more out of the way parts of the Persian domain.

Light cavalry armed with bow and javelins were provided by allied tribes such as the Chionitae, Gelani and Albani.

Indian elephants with archers and javelinmen in their towers were another important part of the Sassanid army. They were chiefly useful for their effect on enemy horses and morale.

We have accounts of four pitched battles against the Romans during Julian's expedition of 363 A.D. and two more against Belisarius' Byzantines. In the first of those against the Romans, the Sassanids had their clibanarii forming a first line, infantry spearmen as a second line and elephants as a third. The Persian cavalry stood to shoot instead of charging with the lance, were charged by the Roman infantry, and after a fierce fight were pushed back and then routed. In the second battle, the Persian front line had its cataphract lancers in the centre with clibanarii on each side. The elephants were drawn up behind. There is no mention of the infantry, who had been very roughly handled in the pursuit after the first battle. The light cavalry may have made a wide outflanking movement to threaten the Roman baggage, but achieved little. The third battle started with a light cavalry attack on the Roman rear. This was beaten off when the emperor brought up light troops to the

rescue, but he was fatally wouned by a javelin in the scrimmage. A fierce attack now developed against the centre and left. This was led by charging elephants who got to close quarters but had heavy losses from Roman hand missiles. The impression made by the jumbos was then exploited by cataphract charges supported by the arrows of the clibanarii. The result was a draw with heavy losses on both sides. The fourth battle saw the same Persian tactics used again, and was another such draw.

The primary Roman rule of conduct seems to have been to close as early as possible in order to cut down the effect of the Persian archery. Once at close quarters, Roman infantry were obviously more than a match for halted cavalry, and we might speculate that Julian had learned something from the defeat of his own cataphract cavalry by German infantry at Argentoratum in 357 A.D.

Deprived of the effect of their archery, the Persians had no option but to charge as in the later battles. Because of the natural desire of a bow-armed warrior to keep at a distance to use his favourite weapon properly, we see these charges being made by the lancer specialists. The Roman infantry must halt and brace to receive the charge, making them a suitable target for archery just before the moment of contact. The scales should have been further weighted in favour of the charge by the residual effects of the sacrificial charge of the elephants. However, in most cases the sheer weight of hand-hurled darts, javelins and heavy throwing spears from the Legiones effectively countered the elephants. The use of artillery against elephants was recommended by manuals, but it does not seem to have been used in these battles, possible because the speed of the attack did not allow time to get it into action.

We see the brunt of the Roman fighting being borne by the Legiones, with the cavalry and Auxilia acting as reserves for counterattacking initial enemy successes.

Belisarius did not have to cope with elephants in his battles and could oppose similar cavalry to the Persian clibanarii. In his first battle against them, he put his infantry in the centre protected by a ditch, and used other ditches to canalise and limit attacks on the wings. However, the turning point came when a force of his Hunnic allies posted in ambush attacked the enemy rear. The main lesson of the second battle was never to entrust your flank to an Arab ally. The Arabs left when times got difficult and most of the Byzantine army was rolled up.

Because of their vast quantity of levy infantry, the Sassanids were much better at sieges than the Parthians had been. They had unlimited expendable labour for building siege mounds under fire, plenty of archery for covering assaults, a good supply of captured Roman artillery, and armoured dismounted cavalry for assaulting a breach.

Once, the defenders found themselves being shot at from their rear by a small group of archers that had infiltrated by a tunnel and occupied a tall building, so that artillery had to be shifted to deal with them. However, the Persian camp could be vulnerable at night, and heavy casualties were once caused them by a night sortie of Legionarii, some of whom used entrenching tools and axes along with their swords to deal with the more heavily armoured of the enemy, a trick that had been employed previously against heavily armoured gladiators during the 1st century civil wars.

When on the defensive in their own country, the Sassanids supplemented their strongly fortified cities with harassing by light troops, crop and forage burning in the enemy path and delaying actions at irrigation canals by moderate sized forces of all arms. They do not seem to have made much use of river shipping, which gave Julian's overland transported fleet effective control of the Euphrates.

THE BLEMYE

These were a tribe of negro raiders who were a constant threat to the open south-west frontier of Roman Egypt. Most of their fighting men were infantry archers, but they also had a strong force of cavalry. These were initially rather inefficient, many being mounted on donkeys for lack of horses, but later improved to almost Byzantine standards. Camels do not seem to have been used, but war elephants of the small African forest species were. The most interesting thing about this people is the survival of Ancient Egyptian cultural features, in particular the royal insignia.

The Romans did not choose to attempt to bring the Blemyes' home country under control, so had to protect the cultivated land with chains of garrisons, some of which had small numbers of camel-mounted soldiers for desert patrolling. The Byzantines later subsidised them, converted them to a form of Christianity, and made them quite friendly.

THE PICTS

The Picts, or "painted people" were a confederacy of tribes which gained control of what is now northern Scotland during the 3rd century A.D., absorbing those formerly known as Caledones. All we know of them from literary sources is that they raided extensively into Roman Britain, at times co-operating in large scale invasions with such other nations as Saxons, Scots from Ireland, and the enigmatic Attecotti. They seem mainly to have come by sea, but that may reflect the efficiency of Roman land defences such as Hadrian's Wall, as well as natural preference.

We know more of them from archaeological work. During the earlier phases of their expansion they favoured coastal sites which they fortified with large stone towers called "Brochs". The distribution of these shows that their culture spread from the north southwards, possibly from Orkney where there is an especially large number of sites. These Orkney sites are curiously omitted from the distribution map in the main modern book about the Picts, which however does show a conspicuous concentration of sites on the nearest part of the mainland.

As well as demonstrating that the expanding Picts felt a need for the protection of very strong fortifications requiring the diversion of a great deal of productive labour, archaeological examination of broch sites shows that the inhabitants were poor, short of metals, insanitary in their habits and had opportunities for acquiring Roman objects by trade or looting.

As their control spread, the broch fell out of fashion. Some stayed in use, one being apparently represented on the Dark Age carved stone monument at Aberlemno. Others were abandoned in favour of wheel houses, sometimes constructed from the brochs stones. This may reflect a greater sense of security as unfriendly neighbours were conquered. Existing ring shaped forts in the newly conquered areas remained in use as habitations. As well as habitation sites, the Picts left a large number of carved stone slabs displaying exceptional artistry. Some of the later of these show armed warriors. Most of these are on foot and armed with a small square shield and a spear. A lesser number show archers and horsemen.

The stones offer a few clues as to possible tactics. One shows a group of spearmen standing together to beat off horsemen by thrusting with longish spears held in both hands underarm. One shows a kneeling archer with his cloak drawn about him for concealment. Others show horsemen with javelins apparently riding round in a circle. We might guess from this that the stubborn spearmen of the medieval armies of Scotland were already in evidence, that cavalry were rather more important than in southern British armies but skirmished with javelins in similar style, and that a shower of arrows from ambush would be a frequent occurrence. From the figures' very light dress, we might also fairly assume that they would have the same ability to move over hills at speed as later Highlanders.

We also have Tacitus' account of Agricola's battle against the earlier Caledones at Mons Graupius. The Caledones' army consisted of swarms of infantry throwing javelins from hill slopes while chariots manoeuvre on the flat. The Roman cavalry had no difficulty dealing quickly with the chariots, who are not described as being supported by cavalry of their own. This suggests possible reasons why the Picts conquered the Caledones. Their archery and cavalry provide an answer to the chariots, while their determined spearmen ploughed through a mass of disorganised javelinmen. However, there are two rather more likely reasons. The first is that Septimius Severus' 3rd century campaigns in Scotland may have drastically weakened the tribes and left them easy victims. The second is that when considerably later we first read of Pictish political administration, they have a single king. If this was also true earlier, the benefits of a single comand may have been decisive.

Parts of the Caledones' military system may have been incorporated in that of the Picts, as there are several references to north British chariots in quite late Roman accounts. One would also expect to find at least some infantry carrying javelins instead of thrusting spears. A far less likely innovation, for which however we have impeccable archaeological evidence, is the existence of at least a few Pictish crossbowmen.

The main problem the Picts posed the Romans lay in their numbers, especially if reinforced by other nations, and their ability to move by sea and thus bypass the land defences. One attempt to foil sea raiders was the Roman use of light warships painted blue to be inconspicuous, which could sink a small fleet, or dog and report on a larger. These boats were themselves called Picti. The Pictish numerical superiority could be relied on to cure itself in time, as there would be a constant diminishment caused by successful looters taking their gains home individually. By the time the main body turned for home, loaded with booty, and driving vast herds and flocks, a relatively small Roman field force could attack it with a good prospect of success. However, this still left the Roman province depopulated and impoverished, so less able to pay the taxes to maintain the defending soldiers.

Other methods that were effective against the Picts' predecessors on the frontier could probably have worked against the new enemy if sufficient forces had been available. The first of these was to pay a subsidy to the tribes immediately beyond the frontier to provide a forward defence, to patrol well forward with cavalry to keep an eye on the friendlies, and to back them with a mobile striking force if they looked like being overmatched. Economising on subsidies, failure to patrol or leaving the friendlies unsupported could lead to them changing sides in pique or in self-defence, just as was to happen later on the north-west frontier of British India.

The ultimate sanction was to collect an overwhelming field army and invade the raiders' homeland, burn their huts, devastate their crops, kill or enslave everybody that could be caught, and to keep on doing it until the enemy gave battle or offered submission. The effects of such an expedition lasted until a new generation of young warriors had grown up and the last of those that had experienced the disaster had died. This could never be properly tried against the Picts, as there were too many needs for the army elsewhere.

THE SCOTS-IRISH

The Scots originated in Ireland, where they lived in an almost continuous state of warfare between their various petty kingdoms. The position of High King of All Ireland was recognised, but rather than reducing the amount of fighting, increased it by providing something additional to fight over. During the rare intervals of peace at home, the Irish raided extensively overseas in their hide boats. These were called Curraghs, and a modern replica has demonstrated that they were quite seaworthy enough for even trans-atlantic voyages. They also probably inspired the later tales of saints sailing on millstones, as a worn-out rounded mill stone makes ideal ballast for such a craft. One such successful raiding trip resulted in St. Patrick's enslavement in Ireland. A less successful one ended with the high king, Niall of the Nine Hostages, drowning in the channel and it has been speculated that he may have run into a Roman squadron. As well as raiding, the Irish established permanent settlements in Pembrokeshire and later in Galloway, the latter spreading out to conquer and amalgamate with the Picts under the rule of Kenneth McAlpine in about 850, thus founding the Kingdom of Scotland.

Scots-Irish armies at home consisted of noble chariotry similar to that of the Britons, backed up by loose formation infantry mostly armed with javelins and short swords. Cavalry were not used. The sling was used for hunting and may occasionally have been used in war. This style of warfare is graphically described in the stories of Cuchulain and the Red Branch. We know nothing of methods used overseas. It is possible to transport cattle and ponies in a Curragh by tying their legs and chariots could be dismantled, so it is quite likely that at least some chariots might be taken on a large expedition.

The main problem posed the Roman defenders of Britain by Irish raiders was catching them. Modern fortresses like those of the Saxon shore were built in the later Roman period at Caernavon and Cardiff and these may have served as bases for naval squadrons. Once ashore, the best hope of the Irish would be either to do their work swiftly then escape again to sea, or to take advantage of alliance with other nations to overwhelm the defenders with numbers or pen them in their fortresses.

The best Roman answer might have been to conquer Ireland. One Roman general estimated that a force of two Legiones plus auxiliaries would be needed, but as far as we know, the experiment was not tried. However, there are indications from Irish sources that the Romans may from time to time have backed an exiled pretender to one or other of the kingships with money, arms and possibly men. One intimation that trained men may have been supplied comes from the description of Clan Calatin, a name reminiscent of "Palatina". This consisted of a powerful wizard and his twenty-seven sons, all of whom formed a sort of multiple Siamese twin with 28 heads, 56 arms, 56 legs, and throwing a simultaneous volley of 28 heavy barbed spears! This could well be a distorted oral account of a body of drilled warriors. Other evidence for Roman interference in Ireland can be found in John Morris' *The Age of Arthur.*

Unfortunately for the Romans, while they may have found it easy enough to put their nominee on an Irish throne, keeping him there or persuading him to stay "bought" was a very different matter.

One other nation that gave the Romans much trouble were the Attecotti. These may have been from Ireland or possibly from Scandinavia. They are described as unusually savage. Several units of them were recruited into the later Roman army, possibly originally from prisoners.

THE LATER GERMANS

Contact with the Roman empire inspired improvements by their enemies. For the most part, these were in the field of arms rather than tactics, which continued much as before. By the 3rd century A.D., swords were common even among infantry, and with some tribes, notably the Alamanni and Franks, heavier weapons had replaced the framea among at least the wealthier foot warriors. These included the Francisca, a throwing axe taking its name from its chief exponents, and pilum-like spears called Angons and Bebrae. All of them could ruin a shield or penetrate armour at short range if well flung. The Saxons and Goths however preferred to stick to larger numbers of lighter weapons. Armour remained practically unknown among the mass of the infantry, and helmets only slightly less so. Cavalry were still armed with javelins and sword, but many now wore armour and more helmets. They remained a relatively small part of the army, as did foot archers. The cavalry were still occasionally accompanied by picked light infantry, but this was not such a common practice as before.

The first major departure from this organisation as a primary close-fighting infantry force was that of the Ostrogoths. In response to warfare against Turkic steppe tribes who were primarily light skirmishing horse archers, a large proportion of these took to fighting mounted, while the remainder became foot archers. The cavalry could thus ride down the horse archers at close quarters and the infantry out-shoot them at a distance. This system could cope with the usual run of Nomads, but not with the Huns, who were far readier to come to close quarters. In an effort to escape from Hunnic pressure, the Ostrogoths sought to migrate into the Roman empire. They suffered a number of defeats inflicted by such Roman emperors as Claudius Gothicus and Aurelian, then in turn inflicted the disaster of Hadrianopolis on Valens. A temporary peace was patched up and they served Theodosius as allies, only later to become hostile again and follow their leader Alaric to sack Rome. During their chequered relationship with the Romans, they gained the services of Roman arms factories and greatly increased their proportion of armoured cavalry. By the time that the Byzantines tried to throw them out of Italy in the mid-6th century, all the cavalry probably had metal armour.

The only other Germans to make the transition to a mainly cavalry army during the period covered by this book were the Vandals, who took the process even further. After they conquered North Africa during the 5th century, the Vandals set themselves up as a warrior aristocracy. They may have occasionally hired Moors as mercenary skirmishers on foot or on horseback, but otherwise, only Vandals bore arms and all fought mounted as armoured cavalry with sword and javelins.

The Romans considered the main problem posed by later German infantry armies to be the impact of their initial charge. If this could be held, the superior training of the Roman foot soldier would gradually gain the advantage. The typical German charge is described as a rush down hill, often in wedge, heralded by massed blowing of warhorns and accompanied by showers of missiles and "'savage and dismal howls".

Two Roman arms that the Germans especially disliked were stone-throwing engines and the cataphract cavalry of the later army. At Argentoratum in 357 A.D., the German cavalry thought so little of their chances against the catafractarii that they dismounted and tackled them on foot, diving under the lances in a not-unsuccessful attempt to hamstring the horses. At the same battle, a German attempt to ambush a Roman wing from vegetation cover was foiled partly by Roman caution and partly by German impatience. However, if anything, the later Roman Auxilia Palatina were now superior to the Germans in forest fighting technique.

The Germans still often had a circular wagon laager in rear of their troops. The Roman defeat at Adrianople was in fact due to them being attacked in rear by a returning force of detached Gothic cavalry while themselves assaulting such a laager. In more open battle, the later Romans would cope quite well. At Frigidius in 394 A.D., a Gothic frontal attack was defeated with heavy loss by western Legiones.

The Goths also had little reply in open warfare to the later Romans' skirmishing Illyrian and Asiatic light cavalry. The Romans took advantage of this to harass them on the march. They would use scorched earth tactics, try to confine the Goths to areas with little food, then attack their wagons when they were forced to move on.

The Byzantines were able to defeat considerably larger numbers of Vandal and Ostrogoth cavalry because while the Byzantines were dual armed with lance and bow, the German cavalry were only effective at relatively close range. The Vandals had no archers at all, and those of the Ostrogoths could usually be avoided.

All the Germans were quite happy aboard ships. The Vandals conquered Africa by sea, the Goths attacked several times with large fleets in the Black Sea, and the Saxons raided Britain regularly across the stormy North Sea. However, the German open boats were no match for galleys and could be countered by quite small Roman squadrons boldly handled. A special coastal command was set up to defend later Roman Britain from Saxon raids under the "Comes Litoris Saxonici" or "Count of the Saxon Shore". This consisted of a chain of coastal fortresses acting as bases for naval squadrons and mobile units that could move rapidly to counter a landing.

THE HUNS

While a very few noble Huns wore armour and carried lances, the great mass of their warriors were primarily light horse archers. However, they differed from most others in that they were also prepared to fight at close quarters. Their culture was entirely nomadic. They were almost glued to their hardy but ugly horses, would not go under a roof, and their nearest approach to a home was their wagon. They were governed by a sort of massed trade union meeting in which the most important men acted as shop stewards and conveners. Occasionally, an outstanding leader would achieve a paramount influence over a number of tribes, and they would then become incredibly dangerous.

A Hunnic army is described as forming up loosely in wedge-shaped masses, but with much disorderly movement and savage noise. Some of these would break up into scattered bands which would rush around with surprising speed and apparent disorder causing heavy casualties with their shooting, closing to point blank range and relying on their speed for escape. A hostile counterattack would be met by new bands closing to shoot at its flanks. Other bands would relieve the first to keep up an incessant barrage. The army would fight at a distance until the enemy was sufficiently weakened or demoralised. Each man would then charge at the gallop regardless of risk to his life to fight hand-to-hand with sword and lassoo.

Huns would not attack fortifications and would not seek to pillage the camp of a defeated enemy if it was stoutly defended.

They are described as "In truces faithless and unreliable, easily swayed. Utterly ignorant of the difference between right and wrong, deceitful and ambiguous in speech, not reverencing religion or superstition, but with an infinite thirst for gold, they quarrel with allies without provocation and live for rapine, slaughter and plunder." In spite of this, they are recorded as serving as faithful mercenaries on several occasions, and under Attila were assisted in battle by a variety of German and Sarmatian allies, though it is true that after Attila's death a number of the Hun's allies turned on them and broke their power.

We know very little about battles won by the Huns, possibly because there were few surviors to write about them. At the great battle Attila lost to Aetius and his German allies on the Mauriac plain, which incidentally there is no reason to suppose was fought near Chalons, a long struggle went on all day and the victors did not risk a close pursuit. Only Hollywood gives Attila the victory!

To spoil an illusion, when the Pope later persuaded Attila to turn back from Rome, he probably used such non-spiritual arguments as the height of the walls, the plague currently raging in Italy, and the recent landing of heavy reinforcements from the east at Ravenna in Attila's rear.

The big influence of the Huns on the Roman military system occurred after their defeat. Eighty years later, we find that nearly every cavalryman of the surviving half of the empire is armed with a powerful bow, and most have gone one better than the Huns by having armour and a long lance as well. The precise time of the changes cannot be identified, but it is logical to attribute them to Aetius, who had lived with the Huns as a hostage, commanded Hunnic mercenaries during the recovery of Gaul, defeated Attila, and held absolute power for twenty years. No other ruler seems to have had the technical expertise and length of reign to see them through.

MAJOR BATTLES OF THE PERIOD

Due to space limitations, only the largest and most significant battles can be included, and only a brief description of these.

Some important battles have been omitted because their details are obscure. For fuller accounts, see the Cambridge Ancient Histories and the books by ancient writers mentioned in the introduction.

Sieges and naval battles are not covered.

ARAUSIO 105 B.C.

Two Roman forces were attacked by a German tribe, the Cimbri, on the east bank of the Rhone with their backs to the river and a gap in between them. The Germans beat each in turn, causing 80,000 casualties.

VERCELLAE 101 B.C.

32,000 Romans under Marius occupied a hill position on the flank of the line of march of a much larger force of Germans.

The first German body, 30,000 strong, made a disorganised and precipitate attack uphill and was virtually destroyed.

The others halted, giving Marius time to infiltrate 3,000 men to a concealed position in the Germans rear.

When the battle reopened, these attacked, and 100,000 Germans were killed and captured.

CHAERONEA 86 B.C.

Sulla with a Roman army allegedly of 15,000 infantry and 1,500 cavalry opposed a Hellenistic type Pontic army of 20,000 cavalry, 100,000 infantry and 60 chariots.

Sulla opened the battle by attacking a Pontic detachment, whose retreat had to be covered by a chariot charge. This failed, but gave time for the Pontic phalanx to deploy.

Although recruited from poor quality material, including freed slaves, this managed to hold off the Roman infantry while the Pontic cavalry broke through to its right. 5 Cohortes of the Roman reserve intervened, but were encircled and in serious difficulties when Sulla arrived in person with his right wing cavalry to rescue them.

The Pontic cavalry then withdrew and began to transfer to the opposite flank, while elite infantry made a fresh attack in the centre.

Sulla sent 4 more reserve Cohortes to aid the centre, and taking 3 Cohortes and his cavalry returned to his original position and attacked, breaking the enemy cavalry who had arrived back disorganised.

A general advance then push the Pontic army into a defile from which only 10,000 escaped.

ORCHOMENUS 86 B.C.

The Romans under Sulla faced a Pontic army of 20,000 cavalry and 80,000 infantry.

As the ground was level, Sulla dug trenches on his flanks to hinder the superior Pontic cavalry. However, this attacked his working parties, who he then had to rally in person, precipitating the battle.

The initial Pontic chariot charge, intended to disorganise the Roman line, failed when the Romans fell back to disclose a row of stakes, then counter-attacked with light infantry and light cavalry.

This was too much for the chariots who broke, carrying away the poor quality Pontic infantry in their flight. In desperation, the Pontic General tried to rally them by sending cavalry from his wings to intercept them, but his weakened wings were then immediately broken by Roman cavalry charges.

Although the Pontic losses were relatively light in the battle, the camp in which they took refuge was carried by assault next day, and most of the fugutives perished in swamps while escaping.

TIGRANOCERTA 69 B.C.

An Armenian army of 55,000 cavalry and 205,000 infantry trying to relieve Tigranocerta had to drive off a Roman force of 12,000 infantry and 3,000 cavalry under Lucullus.

The armies were separated by a deep river. When Lucullus marched off in column to the left, the Armenians thought he was retreating, and were content to let him go. When he turned, cross a ford and attacked their right wing, which consisted mainly of cataphract cavalry, they were taken by surprise and could not adjust their formation in time counter him.
The Romans amused the cataphracts with skirmishing light cavalry to gain time for 2 Cohortes to occupy a small hill in the enemies rear, from which they charged down with orders to forget their Pila but strike with their swords at the horses unprotected thighs.
The cataphracts broke, and carried away the rest of their army in flight.

BIBRACTE 59 B.C.

The Helvetii, a Gallic tribe of 90,000 fighting men attacked Caesar who was occupying high ground with 5 Legiones.

Their first frontal attack was repulsed, but was followed by another combined with an attack on the Roman right wing.

This lasted till nightfall, when the Helvetii retreated to their wagon laager. The Romans followed up, and took the laager during the night after fierce fighting from which only a third of the Helvetii escaped.

VOSGES 58 B.C.

Caesar with 5 Legiones was advancing to attack the camp of Ariovistus when the latter's German army charged him in solid columns, moving so fast that there was no time to throw Pila.

The Romans easily broke the German left, but their other flank was in danger for a time until reinforced by reserves.
The German cavalry were apparently ineffective in this rough country, and may have fought on foot. A 15 mile pursuit pinned the fugutives against the Rhine, most of them being caught.

SAMBRE 57 B.C.

Caesar with 6 Legiones was entrenching his camp for the night on rising ground above the river, when the Nervii, a Gallic tribe depending almost entirely on infantry, charged out of woods 300 yards on the other side of the river, crossed it, and raced up the slopes towards them.
The Romans were surprised and disorganised, and part of their right wing was isolated and in serious danger until Caesar inspired them by fighting in their front rank.

The arrival of 2 more Legiones, who had been marching more slowly, turned the scale, and only 500 of the 60,000 Gallic warriors survived.

CARRHAE 53 B.C.

Crassus, invading Parthia with 28,000 heavy infantry, 4,000 light infantry, 4,000 western cavalry, and 6,000 Arab cavalry (who all deserted on the first approach of the enemy) was met by a Parthian army of 1,000 cataphracts and 10,000 horse archers.

Crassus formed his troops into a hollow square, screened by skirmishers.

The cataphracts charged to drive in the screen, then withdrew to let the horse archers shoot. A counter-attacking Roman force of cavalry, archers and 8 Cohortes was lured out of touch with the main body and destroyed by cataphracts and arrows.

The rest of the Roman army held till nightfall, when the Parthians drew off, then retreated to Carrhae.

The town was not provisioned, so that another great retreat became necessary. This was intercepted; Crassus was killed during truce negotiations, 5,500 of his army fought their way out, 10,000 surrendered, and the rest died.

The Gallic leader Vercingetorix was being besieged inside the hill town of Alesia by Caesar with 10 Legiones plus supporting light troops.

A Gallic relieving force of 8,000 cavalry and 250,000 infantry made an ill-considered attack with cavalry and a few archers alone, being beaten off with ease by the Legiones aided by a sortie of Caesar's German cavalry.

A further attack by 60,000 men charging down hill at one point while Vercingetorix sallied out in the Roman rear was achieving some success but the inactivity of the rest of the Gauls enabled the Romans to switch reserves to meet it.

The battle ended when the Romans took advantage of Gallic concentration on the enemy they were attacking to move cavalry into their rear.

The relief army broke and fled, and Alesia surrendered next day.

ANTIGONEIA 51 B.C.

A Parthian army invading Syria failed to capture Antioch due to lack of siege equipment and infantry, and was ambushed on the march by Cassius with 5,000 survivors of Carrhae and defeated.

BAGRADAS 49 B.C.

Curio with 1½ Legiones and 500 cavalry, partly worn out by campaigning, pursued a Numidian force of 3,000 light cavalry and 10,000 light infantry.

The Numidians avoided contact till his troops were exhausted, then, when he tried to retreat, cut him off from high ground and destroyed his force at leisure.

PHARSALUS 48 B.C.

Pompeius with 29,000 heavy infantry, 3,000 archers, 1,200 slingers and 7,000 horse, faced Caesar with 22,000 or 32,000 heavy infantry, 1,000 horse and some light infantry.

Pompey ordered his Legiones to receive Caesar at the halt, hoping vainly that the enemy would become disorganised during their charge.

However, the advantage given by impetus only compensated for the Pompeians extra numbers.

On Pompeius' left, his cavalry had driven back Caesar's and were wheeling to attack his centre, when they themselves were attacked by 8 reserve Cohortes, and broken.

The rest of Caesar's reserves then fell on the flank of Pompeius' infantry and broke it.

THAPSUS 46 B.C.

Caesar with 20,000 heavy infantry, 2,000 archers and slingers and 1,200 cavalry fought a Pompeian army of 28,000 heavy infantry, 12,000 Gallic, Spanish and Numidian cavalry, 30 Numidian Elephants and large numbers of light infantry.

Caesar had his main force of 4 Legiones screened by light infantry and by his 5th Legio, which had been trained in elephant fighting and broken up into small detachments.

Most of the elephants were killed, but those on the Pompeian left fled through the troops behind them. Caesar exploited the confusion caused, and the enemy collapsed.

MUNDA 45 B.C.

Caesar with 32,000 heavy infantry, 8,000 cavalry, and some light troops, faced a Pompeian army of 44,000 heavy infantry, 6,000 cavalry and 6,000 light infantry.

He found the enemy in a strong position on high ground, and formed up his army at the foot of the slope to tempt them to charge down.

His cavalry chased off theirs, then returned into reserve until all the enemy reserves should be engaged, Caesar not wanting to release his decisive stroke while the enemy were still capable of parrying it.

His infantry reserves were concentrated on his left, and at the crucial moment he led them to the attack, his cavalry lapping around the enemy flank.

The enemy commander tried to counter by transferring the cavalry from his other wing, but his centre thought these were running away, and broke!

TAURUS 39 B.C.

Ventidius, with 11 Legiones, cavalry and a strong force of slingers, was attacked in a hill position by an invading Parthian force, mainly of cataphracts.

The Parthian horse archers seem to have been neutralised by the slingers, who discourged them from closing to effective range, and the charging cataphracts broke against the Legiones.

GINDARUS 38 B.C.

A repeat of Taurus, except that the Parthians depended even more heavily on cataphracts, and their leader, Pacorus was killed, his men then fleeing.

PHILIPPI 42 B.C.

Brutus and Cassius with 17 Legiones faced a similar force under Antonius and Octavianus.

Antonius started to build a causeway across a marsh guarding his opponents flank. When Cassius switched reserves to deal with this threat, Antonius occuped them frontally with a holding attack while he assaulted and carried Cassius' camp. Cassius committed suicide, not knowing that Brutus' troops had made a disorderly but immediate attack on Octavianus' camp, caught him off balance and captured it. Brutus, a poorer general than Cassius, and worried about his communications, gave battle again a few days later and was routed by the combined forces of his opponents.

URUMIA 36B.C.

Antonius, with 16 Legiones totalling 60,000 men, 10,000 Gallic and Spanish horse, and 37,000 others including 6,000 Armenian cavalry, invaded Parthia, opposed by 50,000 horse archers, but relatively few cataphracts.

In the absence of information, he pressed ahead with his main force, leaving his siege train, guarded by 2 Legiones and the Armenians, following behind.

This detachment was attacked by the Parthians, the Armenians rode off without fighting, and the rest of the escort were destroyed.

Deprived of his siege equipment, Antonius could make no headway, and turned for home, keeping to hilly and broken ground where possible. He fought countless skirmishes on the way, and beat off the Parthians in two pitched battles, although his casualties were many times higher than theirs.

He finally escaped with the loss of a third of his army.

TEUTOBERGER WALD 9 A.D.

Varus, with 3 Legiones, was destroyed when caught marching in column with a heavy baggage train through thick forest by Arminius the German, who he thought was his ally!

IDISTAVISO 16 A.D.

Germanicus with 8 Legiones and auxiliaries attacked a wooded hill occupied by Arminius and his Germans. The main German force occupied the fringes of woods to the flanks and flat ground between, only the reserve under Arminius being far up the hill behind the centre.

The Romans advanced in line, spear armed auxiliaries first, then archers, then the Legiones. The Germans dashed out to meet them, and were charged in both flanks by the Roman cavalry as the infantry hit them from the front. They then tried to escape into the woods at the same time as their fellows who had remained in cover tried to escape from other Romans who had entered the woods.

Arminius and his reserves charged down the hill, failed to break through the auxiliaries, and were driven back up it again.

Arminius escaped wounded on horseback. Many of his fleeing tribesmen died while trying to cross the Weser. Others hid up trees, and had to be fetched down with arrows and axes.

AGRIVARII BOUNDARY·15 A.D.

Arminius with a new army tried to ambush Germanicus at a point where the narrow waterlogged plain between the forests and a broad stream was blocked by an old boundary rampart. His infantry waited behind the rampart, while his cavalry waited in the wood to charge out onto the Roman rear.

Unfortunately, Germanicus smelled a rat, and sent infantry into the wood as well as against the ramparts, the cavalry remaining in reserve in the plan.

The Legiones failed to capture the rampart at their first attempt, and fell back for the defenders to be softened up by slingers, javelins and engines.

Attacking again under the cover of the missiles, they took it, then turned into the woods where most of the Germans now were.

The Legiones had the better of the fighting in the wood, Arminius being still too weak from his earlier wound to inspire his men by fighting in the front rank, but the Germans held out till dusk, and the Roman cavalry pursuit was indecisive.

MEDWAY 43 A.D.

A Roman army based on 4 Legiones found its crossing of the Medway, at that point wide and tidal, opposed by a large army of Britons.

When the defenders camped for the night, feeling secure behind the river, several units of Batavian auxiliaries swam across, achieving surprise and causing confusion by concentrating their javelins on the chariot horses.

This diversion helped one of the Legiones to cross by bridge further upstream round a bend. The British temporarily retired shaken, but seeing next day how few Romans had got across and how slowly they could be reinforced, made fierce attacks to try and eliminate the bridgehead, coming near to success before the Roman build up became too much for them.

They then retired to the next river line, the Thames.

CARADOC 51 A.D.

A large army of Britons gathered to oppose a Roman force on high ground, fronted by a wide river, and with the easiest approaches defended by barricades of loose stone.

The river proved to be shallow, and the combination of hill slope, obstacles and missiles was insufficient to slow the Roman advance. This demoralised the Britons, who fled without serious fighting and escaped the Roman pursuit in difficult country, although many non-combatants, apparently left in a hill fort for safety, were captured.

BOUDICCA 61 A.D.

A Roman force of 10,000 men stood in a selected position with its flanks and rear protected by woods and hills to receive attack by possibly 200,000 Britons. The British chariots were countered by archery, and a counter attack by the Legiones in multiple wedge formations first fragmented the Britons, then compressed them against the line of wagons drawn up in their rear.

Almost helpless to defend themselves, 80,000 fell for the loss of 400 Romans.

BEDRIACUM 69 A.D.

Caecina, fighting for Vitellius with 30,000 Roman troops of the Rhine army, was attacked by Titianus with a weaker force of Legiones and Cohortes Praetorae.

The Praetorians, softened by garrison duty in the capital, proved incapable of standing up to the Rhine Legiones, and Titianus' defeat was completed when a force of Batavian auxiliaries defeated his detached flank guard of freed gladiators, and came in behind him.

CREMONA 69 A.D.

A Vitellian force with 4 complete Legiones and detachments of 7 more forced-marched to seize the town, arriving mid-afternoon, just before Vespasian's general Antonius with 4,000 cavalry and 5 Legiones of the Danube army.

The Vitellian leaders decided to attack instantly, in spite of their armies' exhaustion, in the hope of overwhelming the Flavians before they could be reinforced.

A confused night battle ensued, in which the Flavians were favoured by a bright moon in their enemies faces. When a Flavian legion raised in the east saluted the dawn, a local regimental custom, the Vitellians thought that the reinforcements they feared were on the way had arrived, and broke.

MONS GRAUPIUS 84 A.D.

Agricola deployed with 8,000 auxiliary infantry in his front line, with 3,000 cavalry on their flanks. Probably 2½ Legiones and possibly 4 more Alae of cavalry were drawn up in their rear in front of his fortified camp.

30,000 Caledones stood on a slope to his front, the intervening plain being filled with their manoeuvring chariots.

These were quickly brushed aside by the auxiliaries, who pushed on up the hill. The Caledones closed round their flanks, were charged in the rear by the Roman reserve cavalry, and broke.

As they reached the edge of dense woodland, they tried to turn on their pursuers, but Agricola had kept a proportion of his troops in hand, and broke them again. The pursuit then went on in earnest, the cavalry even dismounting to search the woods for fugitives, and 10,000 Caledones perished for the loss of only 360 Romans. It must be remembered that the Romans probably had a large number of wounded in addition, whereas the Caledonian wounded would be unlikely to get away.

The Legiones were not engaged.

TAPAE 101 A.D.

A Roman force of 3 Alae and 8 auxiliary Cohortes, including 1 of archers, aided by German Symmachiarii forced the Iron Gates pass, held by a strong force of Dacian infantry. The Dacians withdrew in good order, taking their wounded.

At least 1 Legio and a Cohors Praetoria remained in reserve and were not called upon.

HULPE 102 A.D.

Rossi suggests that Legio XXX Ulpia and Legio XXI Rapax were attacked by Dacians while preparing to invest their fortress. Rapax broke disgracefully and fled, later being disbanded. The situation was saved by 2 Alae of heavy cavalry who dismounted to fight on foot, assisted by 2 units of Symmachiarii, one of them composed of slingers. Legio XXX Ulpia pushed on, trapping the Dacians against the walls of their fortress and destroying them in a fierce fight.
Rossi's identification of the two Legiones is controversial.

TIGRIS 115 A.D.

Trajan with probably 8 Legiones made an opposed crossing of the Tigris in face of fierce Parthian opposition, partly by distracting the defenders with feints, and partly by covering his bridging parties with missiles from engines and from archers on ships moored in the stream.

Parthian resistance broke, and their capital Ctesiphon was taken by siege.

ISSUS 194 A.D.

Niger with 7 eastern Legiones occupied a hill position with his Legiones part way down the slope, then his light javelinmen shooting over their heads, then his archers shooting over them all. His left flank rested on sea cliffs, his right on dense forest.

A smaller force of Severus' Danube Legiones advanced up the slope covered by light infantry shooting overhead, while their cavalry made a wide circuit round the forest.

The frontal battle was protracted, but Niger was pushing the Severans back when their cavalry came in behind him, cutting off his retreat so that 20,000 perished.

LUGDUNUM 197 A.D.

Albinus with an army of 150,000 men organised around the solid core provided by the British Legiones fought an equivalent sized force under Severus.

The Severans broke Albinus left wing and pursued it back into its camp, which they then stopped to loot. On the opposite wing, the Severans rushed forward and many fell into concealed traps the Albinans had dug, the disorganised force then breaking under a hail of missiles and pushing the Praetorians who were coming to their aid into a ravine on their flank!

Severus, though unhorsed and wounded, managed to rally them, and his cavalry, sent off on a wide sweep arrived behind the enemy flank at the crucial moment.

NISIBIS 217 A.D.

This was a 3 day battle between a large Roman army under Macrianus and an even larger Parthian force under Artabanes. It was the last confrontation between the two powers, Parthia being replaced shortly after by Sassanid Persia.

The Romans drew up with their Legiones in the centre, the light infantry moving in front or behind as necessary through lanes left for them.

The Roman cavalry formed behind the ends of the line and attacked enemy trying to envelope them, the Moors being especially successful against horse archers.

The Persians made successive attacks with cataphract horse, and, an innovation, cataphract camels.

These caused heavy casualties, but suffered themselves from caltrops, the camels with their soft feet being especially vulnerable.

Between charges, the horse archers closed in and shot, opposed by the Roman light troops. Each night, both sides retired to their camps.

On the 3rd day, the Parthians, realising they were getting nowhere with frontal attacks, tried a much bigger flank movement which the Romans countered by extending their front.

The two sides then gave up and made a face saving treaty.

NAISSUS 268 A.D.

A Roman army under Gallienus, now with a much increased cavalry arm, met an invading Gothic army of 320,000 in a battle which is typical of many in which the new cavalry were employed.

The action opened with the Gothic advance guard of 3,000 horse being cut to pieces by Dalmatian light cavalry.

In the main battle, the Romans were driven back, but rallied and counterattacked the Goths who had halted disorganised, killing 50,000 and driving the rest into their wagon laager. At this point, the main Roman force had to march off.

The Goths were blockaded by the remaining Romans until they started to die of starvation then broke out, were twice defeated in battle, and their survivors made prisoner by the Roman light cavalry.

ORONTES 272 A.D.

Aurelian with a large Roman army strong in light cavalry faced a Palmyran army, probably including the remains of the Roman army of the east with at least two Legiones.

He decided not to expose his infantry to the Palmyran cataphracts, and positioned them on the far side of the river. His cavalry were ordered to avoid contact with the Palmyrans, but draw them on until they could be encircled.

Most of the Palmyrans seem to have escaped to fight again.

EMESA 272 A.D.

Aurelian had now been reinforced by eastern Roman units which had cast off their allegiance to Palmyra, as well as his Danube Legiones and Dalmatian and Moorish light cavalry.

The Roman cavalry tried to repeat its previous tactics, but something went wrong, and many of them were ridden down by the cataphracts.

However, the Roman infantry not only coped with the Palmyran infantry to their front, but managed to wheel to take the cataphracts in the rear.

A body of Palestinians armed with heavy two-handed clubs were specially effective, as they could knock a cataphract silly where normal weapons would merely bounce off his armour ineffectively. Palmyran losses were very heavy.

MILVIAN BRIDGE 312 A.D.

Constantinus with an army of 90,000 infantry and 8,000 cavalry, including many new lighter infantry and cavalry units as well as troops from the armies of Britain, Gaul and the Rhine fought Maxentius with 170,000 infantry and 18,000 cavalry of the armies of Italy and Africa.

The battle was hard fought, and decided by Constantinus' lighter cavalry breaking Maxentius' cataphracts.

The defeated army suffered severely, as they had to retreat into Rome over a single bridge, which collapsed, drowning Maxentius. The remnants of the Praetorians were disbanded by the victor, being replaced by new guard units.

CIBALIS 317 A.D.

Licinius took up a position on the edge of a plain, intending to attack Constantinus as he emerged from a narrow passage through hilly country and swamps. However, Constantinus covered his deployment with cavalry and gained manoeuvring space.

The battle lasted from dawn to dusk, when Licinius' left wing gave way, and his army withdrew under cover of darkness.

MURSA 351 A.D.

Magnentius with a very large army of western Roman troops was opposed by Constantius II with a similar force of eastern troops.

A preliminary attempt by Magnentius to arrange an ambush by 4 units hidden in a deserted and overgrown stadium was spotted by his opponents, who blocked the exits with infantry and shot down the ambushers from the upper tiers of the stands with arrows and javelins.

Constantius formed up his army in the plain beyond, with heavy infantry in the centre, missile troops behind them, Catafractarii on their immediate flanks, and horse archers beyond these.

Cavalry with shields and javelins were positioned behind the wings.

Magnentius' dispositions are unknown, except that his right wing was slightly overlapped by his opponents.

The battle was maintained fiercely till after dusk. Magnentius' right crumbled, and his centre then became the target for alternate Catafractarii charges and horse archer shot. He tried to withdraw, but some of his troops apparently failed to receive the order.

Losses were heavy on both sides, but especially so on that of Magnentius.

ARGENTORATUM 357 A.D.

35,000 Germans crossed the Rhine, and were attacked by Julian, possibly the best of all Rome's generals of any period, with 13,000.

The Germans formed up in dense columns. Their right wing consisted of light infantry hiding in ambush, and their left wing of cavalry supported by light infantry.

All the Roman cavalry were on their right wing, facing the German cavalry, who decided they stood more chance if they dismounted to fight on foot!

As the Romans marched up, their left wing commander became suspicious of the wood in front and halted. Seeing he was not going to advance into their trap, the ambushers broke cover and charged, to be easily driven back.

Simultaneously, the other German wing charged the Roman cavalry on foot.

The death of the Roman cataphract commander when his horse was brought down started a panic, but Julian rallied the cavalry on the flank of the infantry centre.
The Germans now charged the Roman centre, where the Auxilia Palatina of the Cornuti and Bracchiati "intimidated them by their gestures", raised their spectacular war cry, the Barritus, and disorganised them with heavy showers of javelins as they came to close quarters.

They were reinforced by two similar units, the Batavii and Regii, and began to establish an ascendancy as the Germans tired.

At this moment, a final German thrust of nobles fighting on foot came in and managed to pierce the Roman first line before coming up against a Legio, the Primani, who broke them after a fierce contest.

The Romans lost 247, the Germans lost 6,000 plus those drowned trying to swim the Rhine.

TIGRIS 363 A.D.

The Persians defended the river line with archers, while forming up their main body some distance away. Their first line consisted of heavily armoured cavalry, their second of poor quality levy spearmen, and their third of elephants.

The Romans under Julianus crossed at midnight, brushed aside the light infantry, formed up and advanced mid-morning covered by light javelinmen. They came quickly to close quarters to avoid the Persian arrows, and pushed them back, at first slowly, and then in rout, "as if their armour was red hot"! 2,500 Persians were slain for the loss of 75 Romans.

MARANGA 363 A.D.

The Persians formed up with cataphract lancers in the centre, other heavily armoured men armed with bows on their flanks and elephants in the rear.

The Roman infantry closed as quickly as possible to avoid the worst of the archery. After moderately heavy casualties at close quarters, the Persians withdrew in fair order, shooting as they went. Roman losses were light.

SUMA 363 A.D.

The Roman army, now led by Jovianus after Julianus' death following a minor skirmish, was attacked on the march by Persian cataphracts preceded by elephants.

The brunt of the attack was borned by two Legiones, the Jovianii and Herculiani who slew several elephants but were disorganised and being pushed back by the cavalry when two Auxilia Palatina, the Jovii and Victores, came to their aid and beat them off, killing two more elephants with the aid of baggage train guards, who threw javelins from a hill they had occupied.

HADRIANOPOLIS 378 A.D.

The main Roman army of the east under the Emperor Valens was assaulting a Gothic army occupying a wagon laager.

The right wing Roman cavalry had advanced up to the laager and were shooting at it, the infantry waiting to advance, and the left wing cavalry beginning to arrive and form up, when the main force of Ostrogothic cavalry returned from a foraging expedition and charged into the rear of the Roman right wing.

The Visigothic and Ostrogothic infantry now left the laager and attacked, overwhelming those Roman left

wing cavalry who had managed to deploy, and closing in on the unprotected flanks of the Roman infantry. These resisted nearly till nightfall before they broke completely, so that many managed to escape covered by the remnants of the left wing cavalry and a rear guard action by the Legiones of the Lanciarii and Mattiarii.

Valens was wounded by an arrow, and died when the cottage to which he had been taken was burned by the Goths to winkle out his bodyguard.

FRIGIDIUS 394 A.D.

Theodosius, having made peace with the Goths, took a large force of them with his eastern army to fight a western army under Arbogastes and his puppet Eugenius.

The Goths led his attack, and suffered very heavy losses when it failed.

However, the remainder of the army made a second attack just before dawn next day, assisted by a freak storm and the desertion of some of their opponents allies, achieving complete surprise and a decisive victory.

The loss of 10,000 Goths cannot have distressed Theodosius unduly!

FAESULAE 405 A.D.

Stilicho collected 30 western units together, probably not over 20,000 men, into a field army to resist Radagaesus, who was collecting together an army of over 400,000 Germans to invade Italy.

Instead of awaiting the attack, he crossed the Danube and by swift marching fell unexpectedly on the German rear and utterly destroyed them.

CAMPUS MAURIACUS 451 A.D.

The western Roman army, having lost its best recruiting areas in Africa to the Vandals, increasingly had to rely on Barbarian allies. In this battle against Attila, his Huns, and his subject allies, the Roman army under Aetius held the left flank, the Visigoths the right, and a mixture of Franks, Alans, Sarmatians, Saxons and Burgundians the centre, reinforced by Armorican Britons, who seem to have become an independent kingdom.

The allied centre anticipated the Huns in seizing a small hill to their front. They held this against Hunnic attacks, hindering the enemy in attempts against the rest of the line.

A Visigothic charge broke the opposing wing, and Attila retreated under cover of night.

The allies did not press the pursuit.

DARAS 531 A.D.

A Byzantine army of 25,000 men under Belisarius opposed a Persian force of 40,000. Instead of seeking refuge inside the fortress of Daras, Belisarius drew up his men outside protected by a series of ditches, hoping that the enemy would attack him at a disadvantage.

The Persian commander arranged his forces in two main lines, one behind the other, retaining a body of élite cavalry called Immortals in hand as a reserve.

Belisarius sent a small body of Huns out secretly to lie in wait on on the enemies flank.

The battle started with an exchange of arrows, in which the Persian came off worst in spite of their greater numbers, the wind being against them.

When they came to close quarters, the Byzantine left wing was routed, but the ambushing Huns saved the situation by charging into the pursuers rear.

3,000 of the Persian right wing fell, and the rest rallied on their infantry.

During an ensuing lull, the Persian commander reinforced his other flank with the Immortals, then attacked.

The Byzantines to their front fell back, and Belisarius sent his reserve against the flank of the pursuing Immortals, cutting them in half, and surrounding and killing 5,000.

On seeing this, the Persian levy infantry threw down their shields and fled.

DECIMUM 533 A.D.

Belisarius was attempting to reconquer Africa from the Vandals with 10,000 infantry, 5,000 Byzantine cavalry and 1,000 Huns.

He sent a detachment of 300 cavalry ahead under John the Armenian and threw the Huns out as a detached flank guard on his left, the right being protected by the sea. Belisarius himself followed up in the rear, knowing that the Vandal King Gelimer was somewhere behind him with a large army.

Gelimer had in fact arranged to attack the Byzantines at the defile at Decimum, which his brother Ammatas was to seize with the other half of the army.

He also ordered his nephew Gibamundus to block the Byzantines escape inland.

Unfortunately, the Vandal timing was bad, and Ammatas arrived at Decimum with his men straggling far to the rear at the same time as John and his 300.

Ammatas, accompanied by only a few men fell, and the survivors fled in rout, carrying away successive fresh Vandal units as they came up with them. John and his men pursued to the gates of Carthage, doing immense slaughter but failed to leave troops to hold the pass.

Meanwhile, Gibamundus and 2,000 cavalry had bumped into the Huns and been destroyed in a running fight.

Not knowing any of this, Belisarius halted a few miles short of Decimum and entrenched a camp, in which he left his infantry while he pressed on cautiously with the cavalry.

Belisarius' advance guard reached the pass at the same time as Gelimer and his main army, occupied a hill, and were driven from it in rout by the Vandals.

Lucky, Gelimer did not follow up, but sat down and mourned for his brother, giving Belisarius time to rally his men and attack. The Vandals, halted disorganised around their King, broke at once and fled. A promising pursuit was brought to a close by darkness.

TRICAMARUM 533 A.D.

Gelimer had gathered together an army 10 times the strength of that of Belisarius and had ordered them to rely entirely on close quarter weapons. He had also been in contact with the Huns, who had decided to stand aloof, then join in against the side that seemed to be losing.

Belisarius tried to tempt the Vandals across a stream that lay between the two armies, but they would not be drawn, and he had to attack himself. His centre routed their opponents, then the Huns joined in, and the Vandal army retired rapidly to their camp, having lost 800 men to the Byzantines 50.

When the Byzantine infantry came up, Belisarius organised an attack on the camp, and Gelimer sneaked off quietly. When his men found he had gone, they too fled.

MAMMES 534 A.D.

50,000 Moors faced with a Byzantine army under Solomon tried a novel tactic that had previously worked against the Vandals. Placing their families in the centre, they made a 12 deep ring of camels round the outside, and prepared to fight with javelins from between the animals legs.

At first this worked, the presence of the camels disorganising the Byzantine cavalry, whose horses were terrified of them, and preventing the riders from shooting straight.

Solomon therefore dismounted 500 men to attack on foot covered by long distance archery from their mates.

Once 200 camels had been killed, the circle was wide open to attack, and the Moorish warriors fled, leaving their families behind. 10,000 were cut down before they reached the mountains.

Camels, incidentally, are not native to North Africa but were introduced in the Roman period.

TAGINAE 552 A.D.

Narses, knowing the Goths contempt for his Byzantine infantry, formed his centre of dismounted lancers of higher morale. These were supported by archers curving forward in a crescent on both flanks. His cavalry were mostly behind the infantry, but one small body were hidden out on his left.

The Gothic cavalry charged, took heavy casualties from the archers, and failed to break into the lancers formation.

Their foot archers were frightened to advance in the face of the concealed cavalry who now showed themselves.

When the Gothic cavalry started to recoil, Narses hit them with his reserve, and they broke.

CASILINUM 553 A.D.

Narses was opposed by 80,000 Franks. These drove back his centre of foot armed with spears and bows, but had to halt when he wheeled his cavalry in along the flanks of their long columnn.

These shot steadily into the dense mass until it started to dissolve, then charged home and broke it.

This battle completed the reconquest of Italy by the army of New Rome.

DRESS AND EQUIPMENT

This part consists of an initial section setting out the evidence for Roman uniform colours, followed by a large number of constant scale drawing of Roman and enemy warrior types and shield decorations, accompanied by brief supplementary descriptions and sometimes by inset drawings of details or variations.

The illustrations are usually reconstructions rather than direct reproductions. They are primarily based on surviving monumental evidence, modified in accordance with archaeological evidence where this conflicts, and supplemented by the accounts of ancient authors. Modern authors have not been used unless their statements can be checked against the evidence.

I originally found that the amount of evidence was so great that I could not cover all the troop types, but instead had to select those most typical. This still applies to a certain extent in spite of the inclusion of many extra figures. Other variations can still be found if you wish to do your own research. In particular, the late H. Russell Robinson of the Tower of London Armouries, whose Roman helmet typology provides the framework of my own illustration sequence, has demonstrated to my satisfaction that Roman equipment was not replaced when it became obsolete but was retained in service until it wore out, so that there might be considerable variation in a single unit. Barbarian warriors must have varied even more widely.

I must acknowledge much help from archaeologists who have shared the results of their research with me, sometimes in advance of publication, especially "Russell", who following an epic and most enjoyable ten-hour conversation at the 1974 Hadrians Wall conference assisted my research "beyond the call of duty". In fairness, however, I should also acknowledge that my informants do not accept all my conclusions. In particular, I am less inclined to discredit monumental evidence on the grounds that it cannot yet be confirmed on archaeological grounds than was "Russell". You will therefore find some helmets and ways of holding shields that he did not believe in. I am chary of negative archaeological evidence; if I deny the existence of a helmet type, with my luck, someone will find it the following week!

In order to save space, cavalrymen have been separated from their horses, but are shown in typical riding postures as depicted by monuments and paintings. A selection of horses are depicted separately. These are based on the nearest modern equivalent to their breed, but dressed in the correct furniture. Variations on these will provide mounts for all the cavalrymen included.

Where a piece of information applies to several figures, it will normally be found in the description of the first figure to which it applies. This cuts down on the space required and reduces the expense to the reader. For similar reasons, we have not gone in for glossy coloured illustrations when a black and white sketch with colour notes fulfills the purpose adequately and does not force the artist to consult his imagination where evidence is lacking.

EVIDENCE FOR ROMAN UNIFORM COLOURS

This is far from complete, but is probably just sufficient to reconstruct the system used. Tombstones and triumphal monuments were originally painted in natural colours but these have with one exception faded away long since. A very few of the surviving Roman wall paintings and mosaics show soldiers, and there are a few references to colours in literature. The various pieces of evidence are listed below in chronological order.

Polybius, writing of the Second Punic War 218 to 202 B.C., mentions that Roman legionaries have a crest of three feathers, two black and one dyed purple.

A wall painting from Pompei, destroyed by 79 A.D., depicts a magistrates' court, including a guard dressed in contemporary legionary style. He has a red tunic, red cloak and red horsehair helmet crest. He does not appear to be an officer. Red tunics are known to have been favoured by earlier Hellenistic armies, but the red crest conflicts with Polybius, who however is admittedly nearly 300 years earlier, giving plenty of time for changes.

A cavalryman's tombstone from Germany of about the same date is said to have had traces of colour when first dug up. This faded rapidly, but it could be seen that the saddle was yellow-brown, the saddle cloth green and the harness red. This is consistent with later evidence, but I cannot establish any details about the stone or its finding. Readers please help!

Arrians' *Tactica* mentions yellow horsehair helmet plumes for cavalry and describes them substituting close fitting Cimmerian (Skythian?) tunics embroidered in "scarlet, hyacinth or other colours" for armour in some kinds of training. Arrian lived 96 to 180 A.D.

A wall painting at Dura Europos, besieged and destroyed by the Sassanids in the 3rd century, shows the tribune of a named auxiliary cohors sacrificing at the head of his men. All wear white or off-white tunics with purple borders at hem and sleeve ends. He in addition wears a white cloak and a yellow helmet crest.

Other wall paintings from Dura include a number from a synagogue depicting Old Testament themes. Although hardly prime evidence, several depict characters in contemporary Roman and Palmyran military dress. One in particular shows an officer in the standard legionary moulded corslet. This and its dangling pteruges are shown an identical shade of yellow-brown, implying rawhide construction. His tunic appears to be dark green with purple edging. Cloak and crest are red. Other figures in the background have scale armour corslets but again have red crests. Another painting shows the Israelites crossing the Red Sea, dressed as late Roman infantry. They seem to have white tunics and red or brown trousers. Their large shields are not patterned, but painted in random colours. All belts, quivers and sword scabbards in the paintings are depicted as red, or rather maroon, leather. Other paintings showing warriors in eastern style dress like that depicted in Palmyran tomb paintings are taken to be evidence for the Palmyran army.

Dura also produced well preserved samples of cloth with the dye often as bright as new. Some of these have been chemically analysed and the dye identified. Dyes included madder for red, a mixture of madder and indigo for a cheap purple, and of indigo and one of a number of yellow dyes for green. Yellow-browns were popular. Most civilian dress seems to have been white with coloured decorations, usually purple. The decoration took the form of sewed on stripes and patches. The shapes used were as depicted in our drawings following. Many similar decorated patches have survived in Egypt, and they are a standard feature of dress for the remainder of the Roman period.

The *Historiae Augustae,* an unreliable compilation of short accounts of the reigns of 3rd century Emperors, mentions items of clothing presented as rewards to soldiers and officers. These include white tunics with purple bands and decorations, scarlet cloaks and tunics, and cloaks and tunics of "Russas". This last is usually translated russet, i.e. red-brown, but this is pure guess work. It could equally be translated as rustic, which might apply to the yellow-brown cloaks I shall be mentioning shortly.

Wall paintings in the Egyptian temple at Luxor reused as a Roman cavalry fort showed soldiers holding horses while a group of officers chat. The paintings themselves were destroyed by an egyptologist who wanted to reveal the hieroglyphics underneath, and are now known only as practically unpublished watercolour sketches in the Griffith Institute of the Ashmolean Museum at Oxford. The soliders are incomplete, but their appearance and that of the officers, who are better preserved, is consistent with 4th century light cavalry of the types classed together as "Illyricani". All but one of the rankers wear white tunics, one of which can be seen to have a green hem and decorative disc. They are bare headed, carry large round or oval shields and are armed with short spears. The exception has a red tunic, a smaller round shield and has his head missing. All have darkish brown long trousers and black shoes. The officers have white tunics and yellow-brown cloaks, both with prominent purple applied decorative patches. Their trousers are off-white, shoes black, belts and scabbards red. They wear Pannonian brown leather pillbox hats and carry very modern looking riding whips. One horse is grey, one chestnut. One horse has a green saddle cloth, and a yellow saddle with red seat.

There are many parallels to the Luxor paintings in 4th and 5th century mosaic hunting scenes from North Africa and Italy. These depict men on foot or horseback carrying spears and the standard late Roman large oval military shield. It seems likely that many are soldiers, if not all. One scene has the Emperor Constantius II looking on dressed like the Luxor officers. The majority of the hunters wear off-white tunics with purple

decoration, a respectable minority red or red-brown, again with decoration. Exceptions are mainly mounted men. Trousers are usually brown, cloaks yellow-brown.

Another mosaic illustrating the feats of Hercules includes two corpses in scale corslets, red tunics with white hem band, red belts and yellow-brown cloak. One has a yellow helmet crest, the other white.

A 9th century Byzantine book illustration purporting to show the 4th century Emperor Julian and his court shows guardsmen in both light blue and white tunics, both types decorated in gold. Trousers are white, shoes black. One man has a red cloak.

The inner fifty-man bodyguard of the 4th century Emperors were called Candidati, which implies that they may have worn white.

5th century poems in praise of the Magister Stilicho and in denegration of his rival mention a unit called "the Armenians", possibly the vexillatio palatina Comites Sagittarii Armeni of the Notitia, as wearing green cloaks, and describe horse armour of gold scales on a red textile backing.

The 6th century mosaic from Ravenna showing the Emperor Justinian and his court includes guardsmen in red tunics with purple and gold decoration, light green tunics with gold decoration, and light green with red decoration. All wear white trousers and black shoes.

A poem from sub-Roman Britain mentions cavalry with yellow crests.

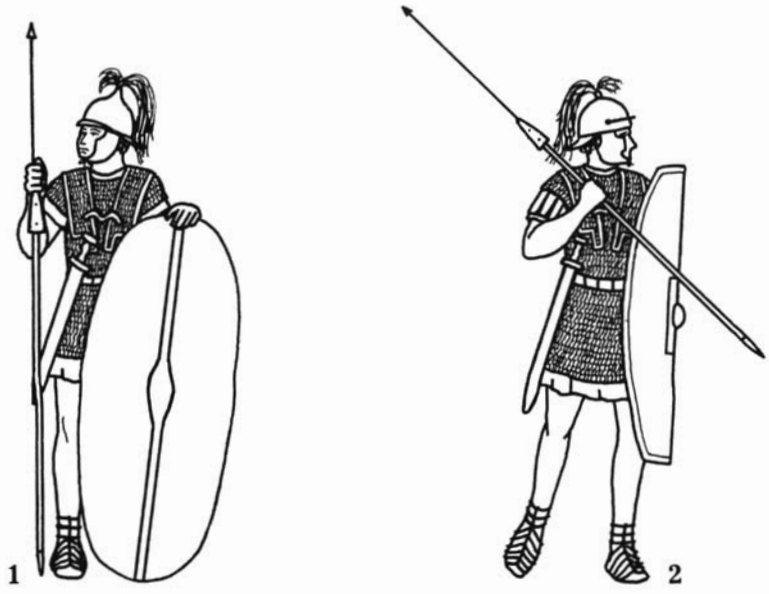
Not all of the above would normally be acceptable as hard evidence, but it is remarkable that even the least respectable items largely conform the others. For example, I have included four mentions of yellow helmet crests of which two are hard evidence, two of red crests of which one is hard evidence, one doubtful (because of its date) mention of black, and one of white. There are no crests in green, blue, purple or natural horsehair colours. Incidentally, horsehair cannot have been as hard to dye as is sometimes stated by modern authors. Indeed, an earlier Greek source expects a wife to dye her husband's crest as a matter of routine.

The other evidence similarly falls into line. We have many mentions of some colours and no mentions of many others. There is certainly no warrant for the peacock display of bright colours with which modern artists have credited auxiliary infantry and cavalry.

My own reconstruction from the evidence is as follows. I suggest that up to the end of the 2nd century, legionaries wore red tunics, red crests and red or red-brown cloaks, and that auxiliaries wore white tunics, yellow crests and yellow-brown cloaks. Both wore brown trousers or breeches where appropriate, black or very dark brown footgear, and maroon leather belts, quivers and scabbards, though archaeological evidence suggests that wealthier soldiers often had scabbards and belts covered with black-and-silver niello work metal plates. Officers of medium seniority substituted white cloaks and Generals scarlet. Guardsmen may also have worn red tunics and cloaks, but I would expect them to have a different crest colour, possibly white in accordance with what may have been a later Byzantine practice. Purple is probably out, being confined to Emperors. Guardsmen and officers wore white trousers instead of brown. Horse harness was maroon, saddle cloths dark green and saddles usually yellow-brown, sometimes maroon.

It is probable that the white tunics were edged in contrasting colours as with civilian clothes of the same date. By the end of the 3rd century, this was certainly true, and the sewn on edging at sleeve end, hem and neck had been extended to provide epaulette patches on the shoulders, two stripes down the front, one from each side of the neck opening and stopping above the waist, a similar pair on the back, and two circular patches low at the front which may have denoted rank. These decorations were usually, but not always, purple. By the early 4th century, legionary red tunics had similar decoration.

By the 4th century, all except senior officers' and guardmen's cloaks were yellow-brown, those of officers having large circular, hexagonal or square purple rank markings in each lower corner. The guards regiments were now nearly all cavalry and had a variety of tunic colours including white, red, light blue and light green.



In other respects, uniforms remained as before. One apparent exception was that Promoti cavalry units wore red tunics, retaining the colour of the legionary cavalry they had been formed from.

By the 5th century, some elite cavalry units were being allowed to follow the example of the guards with brighter colours, at least one wearing dark green cloaks.

I will finish up with a quick survey of metallic and other armour colours. Paintings and mosaics depict helmets as yellow or light blue, presumably representing bronze or steel. Roman bronze was the same colour as our modern brass, not what we now call bronze. Metals were sometimes embellished. Such pieces as belt buckles and harness plaques were often silver plated during the early empire, but this was much less common from the 3rd century on. However, special establishments were set up in the 4th century to embellish officers' helmets and armour with gold and silver. Bronze armour scales were sometimes tinned to produce a silvery surface, and these may have been used sometimes to produce a spectacular guards' or officers' armour by alternating them with unplated scales. Leather armour and pteruges seem to have normally been left the natural yellow-brown, but it seems likely that senior officers would substitute tanned maroon leather.

1. ROMAN LEGIONARIUS OF THE LATE REPUBLIC

This man wears a bronze Montefortino type helmet and a long iron mail corslet with leather-backed shoulder reinforcements. His helmet crest might have been black as in earlier republican times, in some colour chosen by his general to distinguish his troops from civil war opponents, or red as adopted later. His tunic would probably be dyed red with madder, but the heavy recruitment and wear-and-tear of the civil wars might lead to him being found in the normal civilian tunic of mainly undyed wool, sometimes with coloured borders to individual taste.

His long oval shield is dished and has a wooden centre spine on the outside which enlarges into a metal covered boss protecting the central grip. It is made of plywood, covered and edged with thin leather, then painted in his unit's special pattern. Shields varied in size and to a lesser extent in shape. Some were squared off at top and bottom and may have been conversions produced by cutting the ends short to increase handiness. Some examples depicted on monuments seem to have been trimmed to a greater extent at the top than at the bottom.

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His primary armament is the Pilum, a heavy throwing spear with a small head and a long thin iron which was carried on inside the wooden shaft to a considerable depth. It was flung immediately before contact, its narrow head and weight, plus the short range, giving it a good chance of penetrating metal armour, or of lodging in and encumbering an opponent's shield as the Legionarius followed up with his sword. The Legionarius' sword at this period was the Gladius, about two feet long, double-edged, pointed and rather heavy. It is usually described as a thrusting sword, but is in fact nicely balanced for cutting. Archaeological evidence from Maiden Castle hill fort, captured by Legio II Augusta in 43 A.D., confirms its use in this way, though possibly only by back-rankers to make sure of enemy on the ground as the assault pressed on over them. The Gladius was balanced on the other side by a dagger, the Pugio.

Although the legs are almost always depicted as bare, one carving of a Roman warship of around this period shows apparent Legionarii mingling with its marines and wearing identical breeches. It is possible that this concession to comfort was also allowed in other harsh living conditions.

2. LEGIONARIUS OF THE AUGUSTAN REGULAR ARMY

This man differs from the previous one in having a later type of bronze helmet with larger neck and cheek guards and with a reinforcing flange added to protect the weak place over the forehead. Helmet crest and woollen tunic were now probably finally standardised on red for the new long service professional army.

His shield is a lighter and handier pattern squared off at the top and bottom. Some of these have central spines like that illustrated previously, and may be cut down conversions.

The point should be made that the introduction of a new pattern of equipment did not mean that the old types were necessarily withdrawn. This may have been the case with praetorians, but archaeological evidence suggests that older models were either reworked to approximate the new type or simply kept in use until they wore out. This could lead to a considerable mixture within a single unit.

3. LEGIONARIUS OF THE EARLY 1ST CENTURY A.D.

This man wears an iron helmet of Imperial-Gallic type, coming much lower over the neck. It has a raised guard above the ear aperture, and is embossed with an eyebrow design on the forehead, ridges near the

junction with the neck guard and small bosses on the cheek pieces. He wears a scarf inside the neck of his armour. Under the armour and over his tunic he wears a soft leather or textile garment with double rows of dangling heavy leather strips called Pteruges at shoulders and waist. These project below the mail to provide extra protection for the upper arms and thighs. A reconstruction based on the damaged funeral monument of Caius Valerius Crispus from Wiesbaden has unfortunately interpreted the lower set of Pteruges as a very peculiar pair of patterned shorts, and has been widely copied. Further protection is provided by the Cingulum, a metal plated belt incorporating narrower but metal studded danglers over the genitals.

The shield shown is the parallel sided semi-cylindrical version which today is popularly thought of as the typical Roman shield and referred to as a Scutum. In actual fact, Scutum was the general Roman term for all large shields including the various oval and modified oval types, and the semi-cylindrical shield was a minor variant on that to be shown next. Both the new types were much more curved than previous types. They were held in the same way by a single grip behind the boss at ninety degrees to the long axes of the shield, and so could be punched offensively at an opponent.

The Gladius now hangs from a baldric over the shoulder instead of from the belt. The Pugio remains where it was.

4. LEGIONARIUS OF THE MID 1ST TO EARLY 2ND CENTURIES A.D.

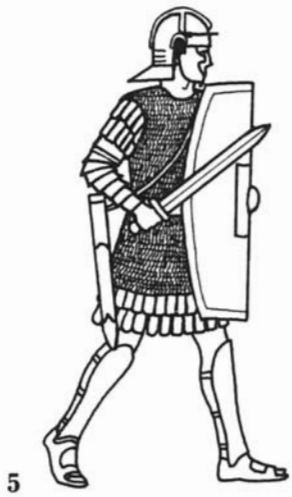
The mail corslet or Lorica Hamata has been replaced by the Lorica Segmentata, a laminated defence of iron plates linked flexibly together by leather thongs and brass hinges. Early models seem to have had their teething troubles as broken fittings are common on archaeological sites, but an improved version remedied the weaknesses. The Lorica Segmentata became the standard body armour for the men of western, if not all Legiones, but it is not completely certain whether it was ever used by Legiones stationed near the eastern frontier, and the reasons for its introduction are not really known. It supplied greater protection for the vital areas at the expense of removing it from some non-vital areas, and should therefore presumably reflect the use by opponents of weapons capable of penetrating mail to an unwelcome extent. If it was not used in the east, as was suggested to the author by the late H. Russell Robinson, this could be due to the better ventilation of mail, or possibly to the main threat there being from the light arrows of horse archers rather than from the heavier flung spears of western barbarians. The changeover seems to have taken place rather quickly, and it is possible that the mail corslets were withdrawn and reissued to auxiliary infantry previously unarmoured.

The horse tail helmet crest was now replaced by a clip-on rectangular box crest holding either relatively short horse hair bristles, as in the case of the ordinary Legionarius, or possibly feathers in the case of higher ranks. The battle scenes on Trajan's Column demonstrate that rank-and-file did not at that time wear helmet crests in battle.

The shield differs from that of the last figure mainly in having curved rather than parallel sides. A few seem to have central ribs, and many others have thunderbolt decorations giving the impression of such a rib. The curved side shield is closer in design to earlier shields than the straight sided version, so can be presumed to be earlier. It continued in use alongside the straight shield and eventually inspired its successor.

The Pilum has been made still heavier by the addition of a large lead weight at the point of balance. The Gladius has acquired a sharper point, presumably as thrusting became increasingly more favoured than cutting. While it continues to hang on what we today consider the more awkward right side on formal monuments such as Trajan's Column, less formal monuments sometimes show it on the left, possibly reflecting a difference between official policy and individual practice.

Praetorian units identified on Trajan's Column by their shield decorations are dressed and equipped identically to Legionarii. It seems likely that they would have been the first to get new equipment and would have been more consistenly equipped than the Legiones.



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5. LEGIONARIUS SPECIALLY EQUIPPED FOR TRAJAN'S DACIAN WARS

Trajan's Column shows troops in the latest pattern equipment on general issue. Another monument to the same campaign, built by the army themselves at Adamklissi, not only shows that much obsolete equipment was in use, but that an attempt had been made to equip men especially to meet the Dacian battle-scythe called Falx. This involved reissuing long mail corslets instead of the shorter Lorica Segmentata, providing undergarments with Pteruges and issuing all ranks with the bronze greaves recently withdrawn from Centuriones. Unlike the earlier Greek types, these were not sprung on but fastened with straps. The swordarm was specially protected with a laminated defence which could have been of iron, bronze or leather, possibly confiscated gladiatorial armour, and the helmet was given iron reinforcing bands. It is very unlikely that such equipment could have been provided on a very large scale. It is of course possible that some of the eastern Legiones involved in the campaign were still using mail, but greaves and arm defences must have been in very short supply. Most likely each Legio or possibly each Cohors had a small detachment to take on bands of Falxmen when they appeared.

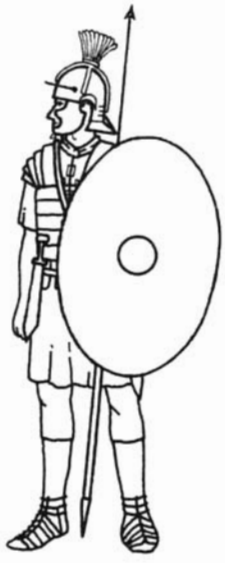
6. LEGIONARIUS OF THE MID 2ND CENTURY A.D.

This man has a developed version of the Lorica Segmentata with simpler and stronger fastenings, worn over an undergarment with leather Pteruges. Auxiliary pattern breeches had been increasingly used on a semi-official basis in inclement conditions over the previous hundred years, and now became standard at all times. They are often stated to have been of leather, but I know of no direct evidence for this, and wool seems more likely.

His helmet is of Imperial-Italic type, and could be of iron, bronze or iron with bronze reinforcements. It has a hanging loop on the neck guard. Crests were now often worn in battle.

The shield has now reverted to oval in outline, but retains the lateral curvature, though not quite to the same extent as previous models. Praetorians were issued with it somewhat earlier, and can be seen carrying it in equipment otherwise very similar to No. 4.

The sword has now moved officially to the left.



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7. LEGIONARIUS OF THE LATE 2ND AND EARLY 3RD CENTURIES A.D.

This equipment is identical with that of the last figure except that Pteruges are no longer worn at the shoulder and have been replaced by much smaller tabs at the waist.

As usual, Praetorians had been first served, and had been dressed like this during the mid and late 2nd century A.D. before adopting their final equipment.

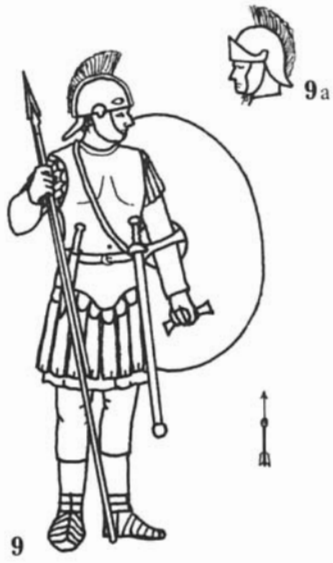
8. PRAETORIAN OF THE EARLY 3RD TO EARLY 4TH CENTURIES A.D.

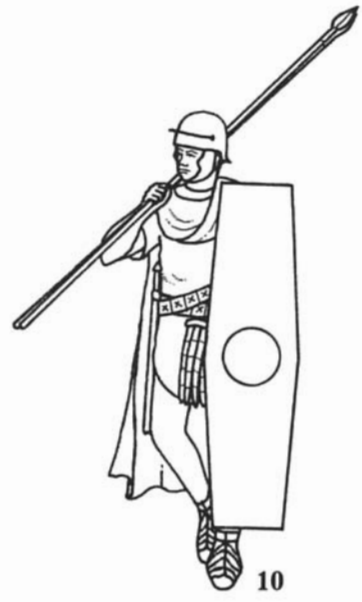
The Lorica Squamata of metal scales sewn to a foundation has replaced the Lorica Segmentata. Roman scale armour was usually, though not always, of bronze rather than iron. It could be left its natural colour, which due to the alloy used would be rather more like our present brass than the colour we think of as bronze, or tinned to make it silvery. Alternatively, a very fine effect could be produced by tinning alternate scales only, and this might well be used by ceremonial troops such as Praetorians. As far as we know, improved appearance would be the only advantage over previous armour.

The tunic now has wrist length sleeves. Nothing is known of its colouring, but in view of the close connection with the Legiones, red is fairly likely, probably with contrasting cuffs, possibly of purple or white. Later guards units had red, light blue, light green or white tunics, decorated at the cuffs with purple or gold. Their breeches or trousers are depicted as white like those of officers rather than the usual brown. The helmet crest may have been white.

The Pilum has been replaced by a lighter javelin with barbed head.

Praetorians in this equipment are shown in the depiction of the battle of the Milvian Bridge on the Arch of Constantine and listening to a speech on the Arch of Galerius. They are often misidentified as cavalry, mainly because in the latter scene one holds the emperor's horse.





9. LEGIONARIUS OF THE MID 3RD TO 5TH CENTURIES A.D.

The great increase in the size of the army from Septimius Severus time onwards, plus the increased demand for cavalry armour, meant that a cheaper method of armouring infantry had to be found. The solution apparently adopted was to use a moulded muscle cuirasse of rawhide with attached Pteruges. Rawhide is both strong and light, and any reduction in protection was made up by the larger shield also introduced. However, it provides a rigid defence rather than the flexible one of earlier armour types, which may be why the Gladius was replaced by the longer Spatha, maintaining the same weapon reach. Alternative explanations of the copious monumental evidence, that the armour is of iron mail over an undergarment or of iron or bronze plate, do not hold up. Firstly, muscle shapes and navel are depicted, ruling out mail. Secondly, plate corslets would have provided no more protection than Lorica Segmentata, been far less convenient to wear, and been far more difficult and expensive to produce. Colour depictions show the corslet the same yellow-brown as the Peteruges.

A much cheaper mass produced iron helmet was also introduced. This had a two-piece bowl joined along the centre line by a separate reinforcing ridge, and fitted with a separate neck guard. Several of these have been found in fortresses where a Legio had been based. Unfortunately, the monuments all show a quite different helmet which I have included as 9a, derived from, but not identical to, classical Attic helmets.

Depictions on monuments from far apart places are so identical that I hesitate to ascribe this type to artistic ignorance. A more likely explanation is that the elite Comitatenses and Palatina units likely to be depicted on monuments had in fact a more expensive type than border Legiones. It is noteworthy that while most helmets on monuments are shown crested, the helmets found have no obvious attachment for a crest.

The crest type depicted is accompanied by others up to the mid-4th century A.D., then becomes universal. The other early types include the horse tail type of No.'s 1 to 3 as well as the succeeding box crest.

The oval shield is not only much larger than the previous model, but almost flat instead of laterally curved, made of solid planks instead of plywood, and supported by a double grip at elbow and hand instead of at the centre only. This is plainly shown by a number of monuments.

Weapons have also changed. The Pilum has now been replaced by the Spiculum, a rather lighter spear but retaining much of the former weapon's armour piercing characteristics while being more suitable for holding

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off cavalry when retained in the hand. It is combined with a lighter and longer ranged javelin called the Verutum. This had a narrow armour-piercing head similar to that of the larger weapon, though obviously with nothing like the same chance of penetrating.

These "common missile weapons" as Vegetius calls them, were increasingly supplemented during the course of the 5th century A.D. by the Martiobarbulus. This was a small lead weighted throwing dart stabilised by a feathered tail, five of which were carried in the hollow of the shield. They had little armour penetrating power, but their barbed heads made them very suitable for crippling an unarmoured man or animal, while they greatly outranged conventional javelins. Initially introduced in Diocletian's newly created Legiones Palatinae, the Joviani and Herculiani, they rapidly spread, first probably to the Mattiari, then to other Legiones, and finally to Auxilia. Possibly because of the new emphasis on long range fighting, the Spiculum seems to have gone out of use at the end of the 4th century A.D., but the Verutum remained in use until the end.

The long bladed Spatha that replaced the Gladius is often described as a barbarian cutting weapon. This is not so. It is best described as a dual purpose weapon optimised for thrusting, and does not derive from Celtic cutting weapons, though it was to develop into the Dark Age and Medieval swords.

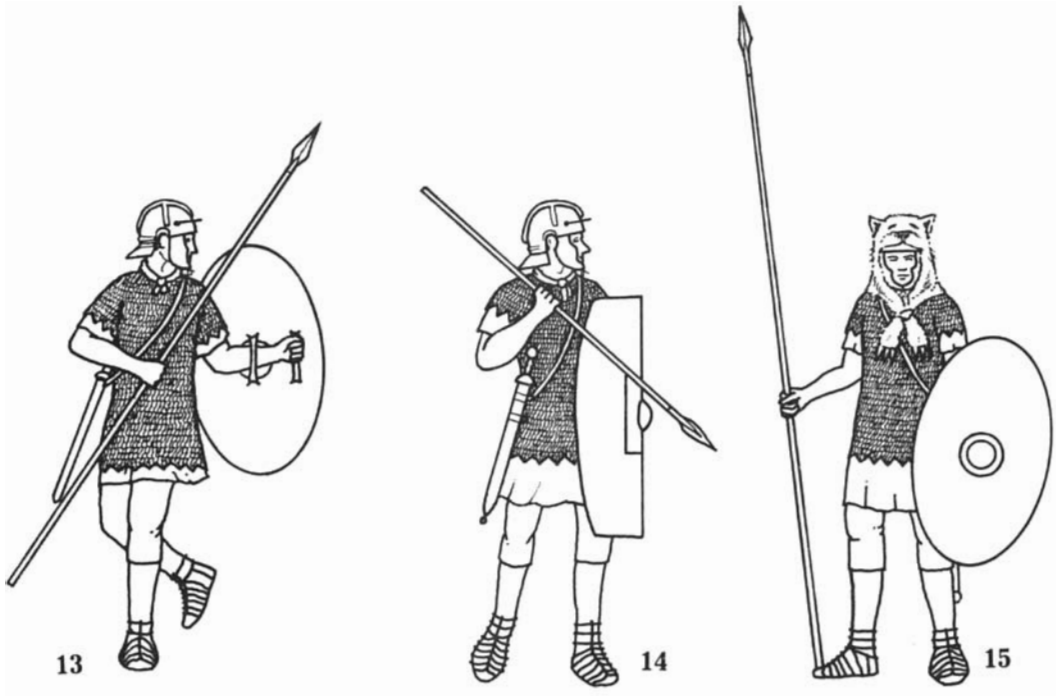
10. AUGUSTAN AUXILIARY INFANTRYMAN

This man is unarmoured except for a simple bronze helmet and his long flat shield. He is armed with sword, dagger and two light spears called Lancea, capable of being thrown further than the Pilum, though with less effect against armour, or retained in the hand to thrust overarm. His tunic is probably natural wool colour, his cloak a light yellow-brown.

He provides the essential lighter infantry complement to the Augustan Legionarius, being better able to cope with rough or broken terrain.

11. AUXILIARY INFANTRYMAN OF THE EARLY 1ST CENTURY A.D.

The main difference here is that a mail corslet is now worn, partially covered by an over-jerkin, probably of soft tanned leather. It is possible that auxiliary mail was cut down or cannibalised from surplus legionary



armour made available in the first instance by the Augustan reduction of the Legiones and later by replacement with the Lorica Segmentata. Otherwise, its issue to second class troops is a little puzzling, as it was the most expensive form of armour, and cheaper types such as scale were readily available and proved by later use to be suitable. The shield is now a more convenient flat oval with cut-off ends.

12. AUXILIARY INFANTRYMAN OF THE MID 1ST CENTURY A.D.

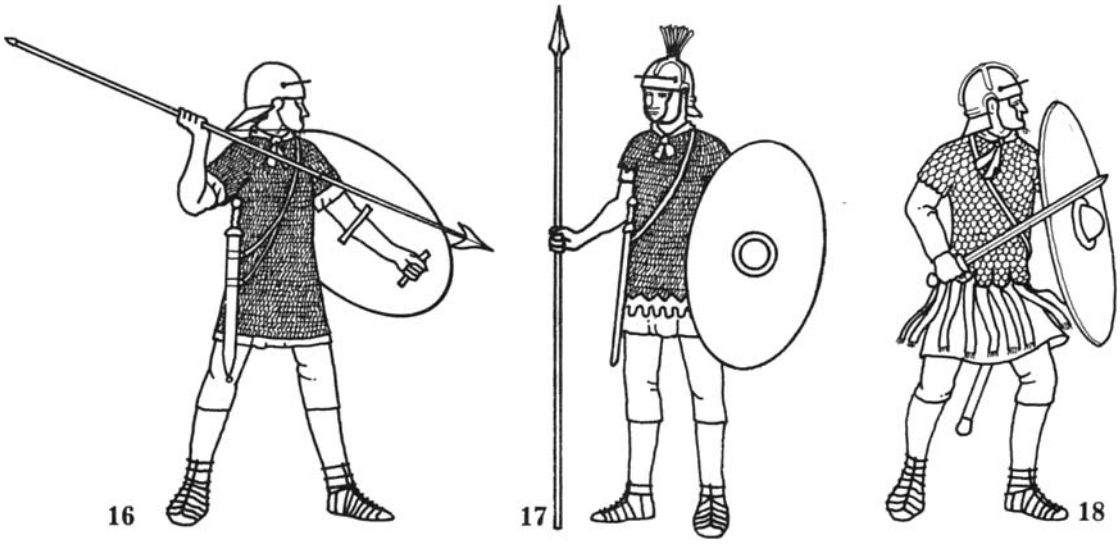
The leather jerkin has now either been abandoned, or more likely in view of later practise, is now worn under the mail. The bronze helmet has been improved by adopting a simplified version of the current legionary design. The shield is now a true oval, less likely to catch in undergrowth. The basic weapons have not changed, but archaeological evidence suggests that a number of lighter javeleins were carried as well as the two Lancea. The sword is now carried on the left, but this is probably not official practise. Study of monuments leaves a strong impression of a constant but not invariably successul struggle by officers to enforce the wearing of swords on the right in contradiction to the men's preference.

13, 14, 15 & 16. AUXILIARY INFANTRYMEN OF THE LATE 1ST AND EARLY 2ND CENTURIES A.D.

No. 13 is the most typical example. His bronze helmet has been further improved by the addition of cross reinforcements to the crown. The sword is now carried from a baldric on the right and is supplemented by a single Lancea with rather heavier head than before and probably several lighter javelins. Mail shirts vary in length and mostly now have scalloped edges. Short scale corslets are sometimes substituted.

No. 14 belongs to one of the several units of Scutata, the main difference from the average auxiliary being that he carries a legionary type shield.

No. 15 is rather more of a rarity, though again more than one unit is represented on Trajan's Column. The long spear is possibly a little doubtful, but Tacitus does imply that some Germanic auxiliaries used such weapons. They are not especially associated with the head dress depicted. It is tempting to assume that the similarity of the head dress to that of the earlier Republican velites identifies the wearers as the legionary light troops we know from other sources to have existed, but sadly, the shield emblems do not look legionary.



No. 16 has an early pattern helmet and corslet, and his spear identifies him as a member of a Cohors Gaesatorum Rhaetorum. It is called a Gaesum, and its heavy iron shaft makes it closer to the Pilum than to the Lancea.

Monuments show shields with a single grip behind the boss and with double grips on the long or short axis. However, archaeologists have so far found evidence of only the single grip type. This does not of course mean that the others were not used.

17 & 18. AUXILIARY INFANTRYMEN OF THE MID 2ND CENTURY A.D.

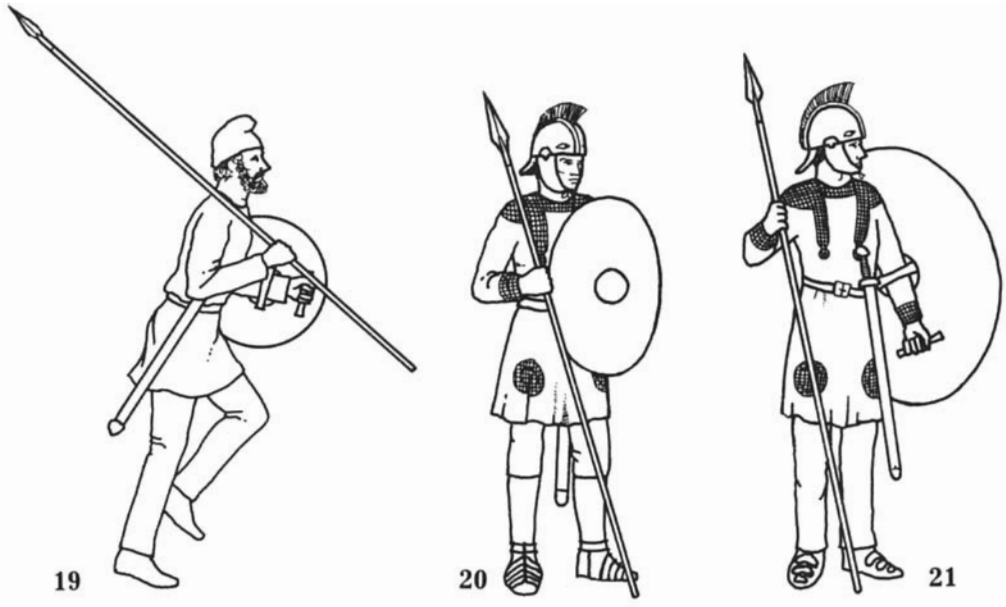
No. 17 wears a short mail corslet with a rather longer leather jerkin below it. Very similar figures appear on Trajan's Column without the helmet crest, which now begins to be shown on monuments for the first time. it was probably yellow.

No. 18 wears a scale corslet over an undergarment with attached Pteruges. He might equally wear it without or be crested. The long sleeves of his tunic imply that he is slightly later than No. 17.

The reduction in the length of mail corslets and increasing substitution of scale probably means that the ex-legionary mail was wearing out faster than it could be replaced. Alternatively, a need for greater mobility may have played some part in reducing the amount of armour worn by infantry.

19. AUXILIARY INFANTRYMAN OF THE LATER 2ND, 3RD AND EARLY 4TH CENTURIES A.D.

This man wears no armour. Instead he has a long sleeved tunic in natural wool colour, probably with coloured trim. He wears long brown trousers. The placing of trim varied with time. Initially it would be confined to sleeve ends and tunic hem, but by the 4th century it might approximate to the patterns shown later for Auxilia Palatina. Headgear was not always worn, but when it was it was usually the cap illustrated. This was later replaced by something very like a modern Russian fur cap. Two monuments show the earlier cap being apparently worn over a helmet like that of No. 14, with the cheek pieces showing below it. Beards are not universal.



20. LANCIARIUS OF THE 4TH CENTURY A.D.

We first hear of some Legionarii being armed with the lighter Lancea instead of Pila under Hadrian, when Arrian describes a formation in which the first four ranks have Pila and the next four Lancea. All these apparently wore standard legionary armour.

Arrian also mentions legionary light infantry, but these have yet to be identified. However, by the start of the 4th century A.D., each Legio contained a proportion of lightly equipped men called Lanciarii. Like 18th century light companies, these were often sent to act independently and sometimes brigaded with others of their ilk.

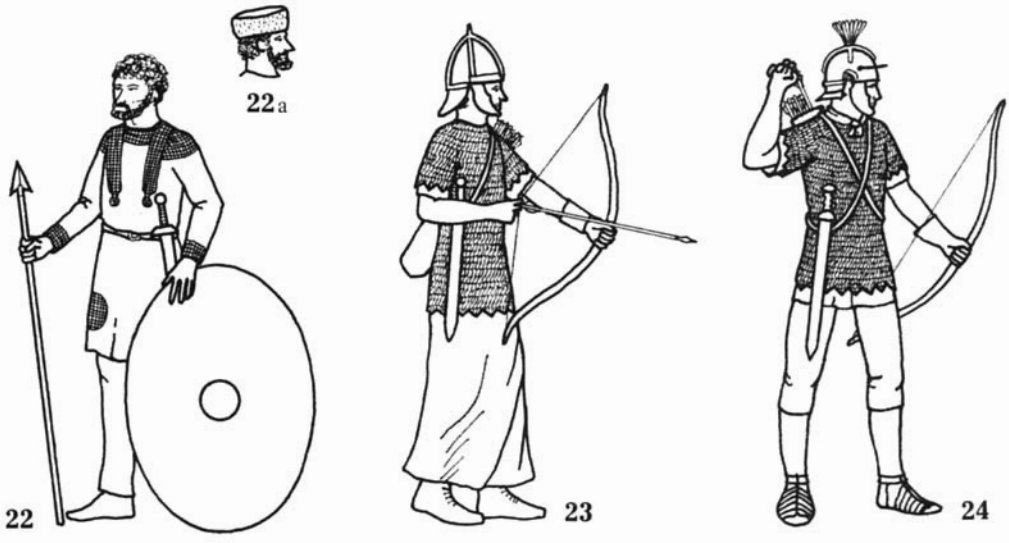
The man illustrated is from the Arch of Constantine, and seems to fit the bill. Legionary light troops with shields are mentioned later in the 4th century by Ammianus Marcellinus and Vegetius mentions light troops who dart out from a Legio's ranks to pursue when it breaks its opponents, who he calles Ferentarii or "Actives" and Exculcatores or "Stampers out". These presumably are the same people in different guise.

Such legionary light troops would presumably wear legionary red tunics with the standard 4th and 5th century applied decoration.

21 & 22. SOLDIERS OF THE 4TH AND 5TH CENTURY AUXILIA PALATINA

These figures differ from the Lanciarius in their big shields, similar in size and shape to the contemporary legionary variety, and by usually being in long trousers instead of the breeches now associated with legionaries. They wear white or off-white tunics decorated with the usual 4th and 5th century applied patches, normally in purple. Trousers are brown, shoes black and helmet crests yellow. Cloaks if worn are yellow-brown. Border auxiliaries are likely to have been dressed in similar though possible dingier style, possibly without decorative patches, Beards are normal in units not issued with helmets, unusual in others. No. 21 is possibly more likely to be from a unit recruited in Celtic lands, No. 22 from a German unit.

Lancea, Veruta and similar light spears or javelins were carried, but not the Spiculum. By the end of the 4th century, Martiobarbuli would also probably be issued. Both single hand and double shield grips can be seen on monuments, but archaeological evidence suggests the single grip was especially favoured by Germanic units.



23. EASTERN AUXILIARY ARCHER OF THE 1ST AND EARLY 2ND CENTURIES A.D.

This man is taken from Trajan's Column but is probably representative of eastern archers since Augustus. He wears a helmet which is probably fabricated from bronze segments and a mail corslet. Others are depicted in scale corslets.

24. WESTERN AUXILIARY ARCHER OF THE LATE 1ST AND 2ND CENTURIES A.D.

This man is very similar to No.'s 13 to 17, mainly differing in substituting a recurved composite bow and quiver for spear and shield and wearing a shooting glove on the left hand. He first appears on Trajan's Column alongside No. 19, but without a helmet crest.

25. EASTERN AUXILIARY ARCHER OF THE MID AND LATE 2ND CENTURY A.D.

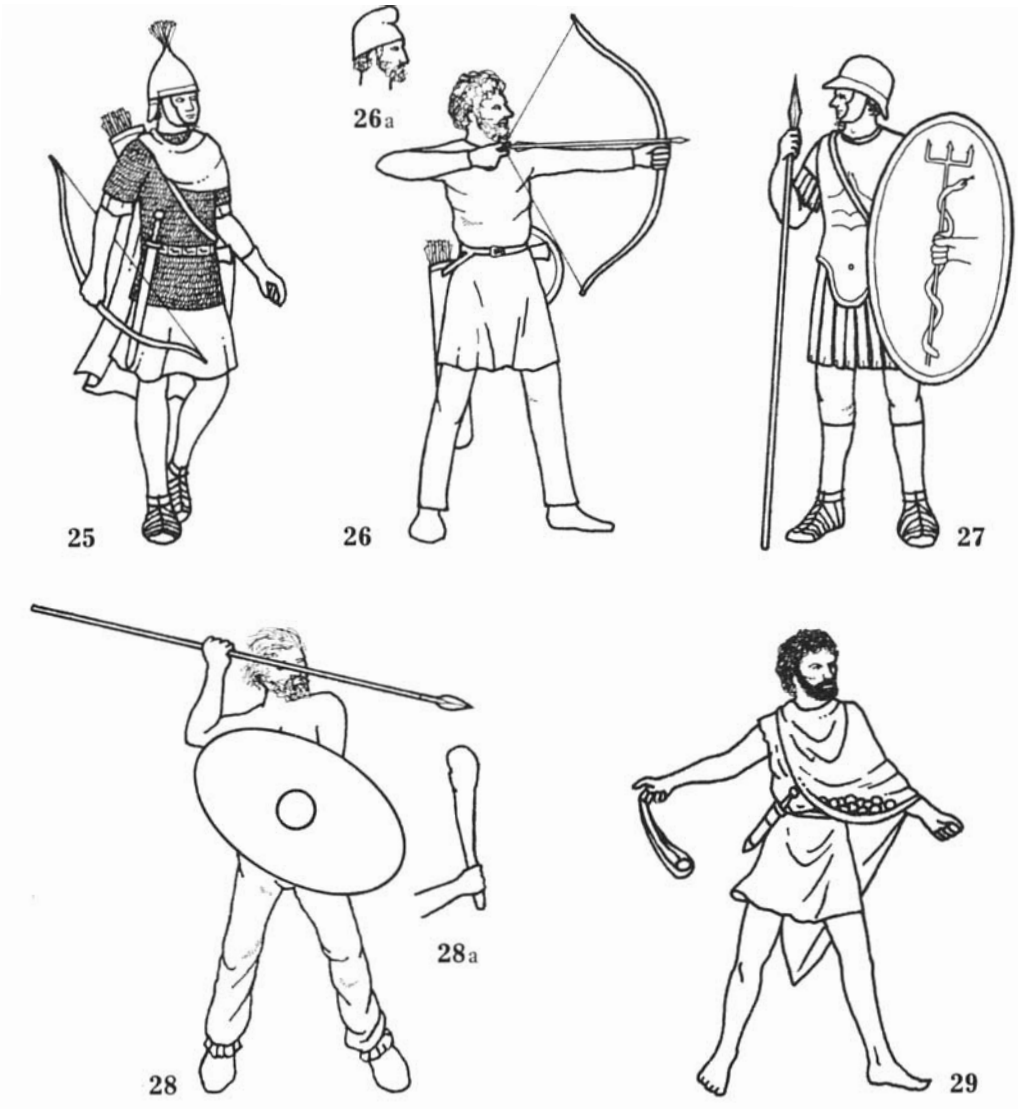
This man is based on the rather worn tombstone of a Hamian archer on Hadrian's Wall. His tunic has been shortened to a more practical length, but rather strangely in view of the climate, he is not wearing breeches. his bronze helmet has a one-piece bowl, and he carries a light axe in addition to his short sword.

26. ARCHER OF THE 3RD, 4TH AND 5TH CENTURIES A.D.

A long sleeved tunic and long trousers are now worn, and a light axe carried at the belt on his left together with a small round parrying shield is the most common secondary weapon, balancing the quiver which now hangs from the belt on the right. Auxiliary archers of the 3rd and early 4th centuries A.D. are usually depicted in a cap like that inset. Later archers are bare headed and would have the standard applied decorations like those illustrated by No.'s 21 and 22. Legionary archers would differ in having a basically red tunic and breeches instead of trousers.

27. AUGUSTAN MARINE

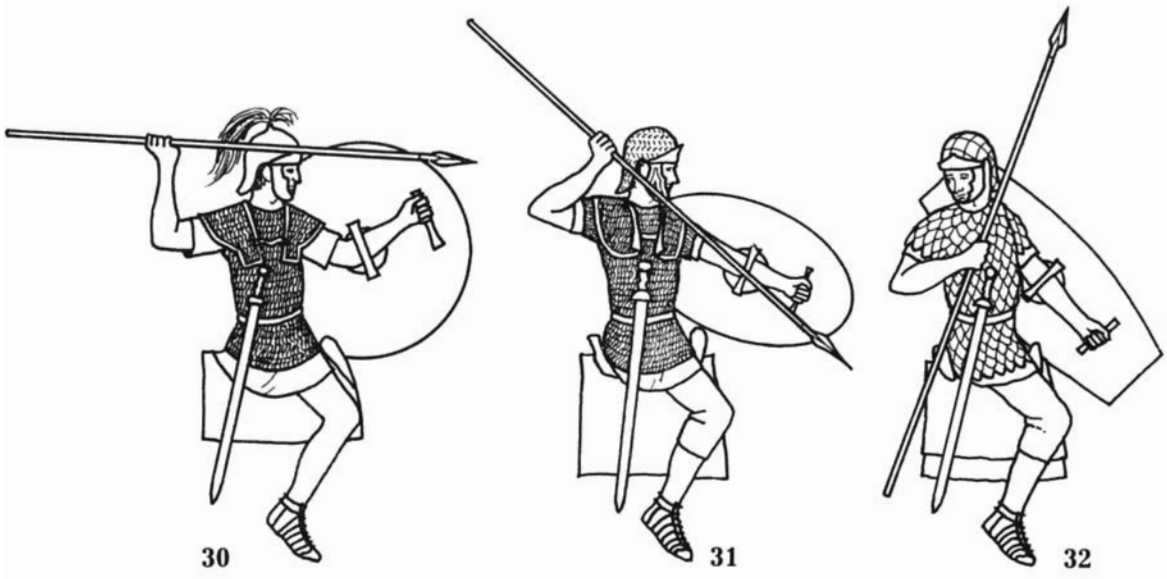
This man is taken from a monument thought to celebrate the Battle of Actium. He wears a moulded rawhide cuirasse with Pteruges, a modified Boetian helmet and knee breeches. He is armed with Lancea and Gladius.



Lighter javelins must also have been issued, as one of the more difficult skills required of a marine was apparently the art of throwing javelins from a sitting position!
This costume may have lasted until the mid 1st century A.D., as the raising of new Legiones from the fleet implies that Marines had more in common with Legionarii than with auxiliaries. From then on, they probably approximated to auxiliary infantry. A ship's permanent marine force were supplemented in a boarding fight by its rowers, who kept shields and weapons under their benches. However, only upper bank oarsmen are at all likely to have worn mail.

28 & 29. BARBARIAN SYMMACHIARII

These are not properly trained and organised auxiliaries, but tribesmen hired temporarily to fight in their native style with the weapons they are used to. They might have a single Roman officer detached to command them through native subordinates, or be led by a semi-Romanised chieftain.



No. 28 is probably a German, and is depicted on Trajan's Column armed with the club shown inset as an alternative to the usual spears.

No. 29 is probably a Spaniard. He is also from Trajan's Column, where he is slinging stones from a supply gathered up in the fold of his cloak. Roman slingers were more usually provided by training a proportion of each auxiliary Cohors to use a sling in addition to their other weapons. These used specially cast lead slingshot. Other Symmachiarii included Britons and the Moorish cavalry illustrated later.

30. LATE REPUBLICAN OR AUGUSTAN CAVALRYMAN

This man wears a mail corslet with wider than normal shoulder straps and a bronze Attic helmet with yellow horse tail crest. His tunic is probably off-white with coloured trim, but could be red if he was one of the small number of cavalry attached to a Legio. His legs are bare.

His weapons are Lancea and lighter javelins backed by a long sword called a Spatha. The large round shield has an external raised rib like that of No. 1.

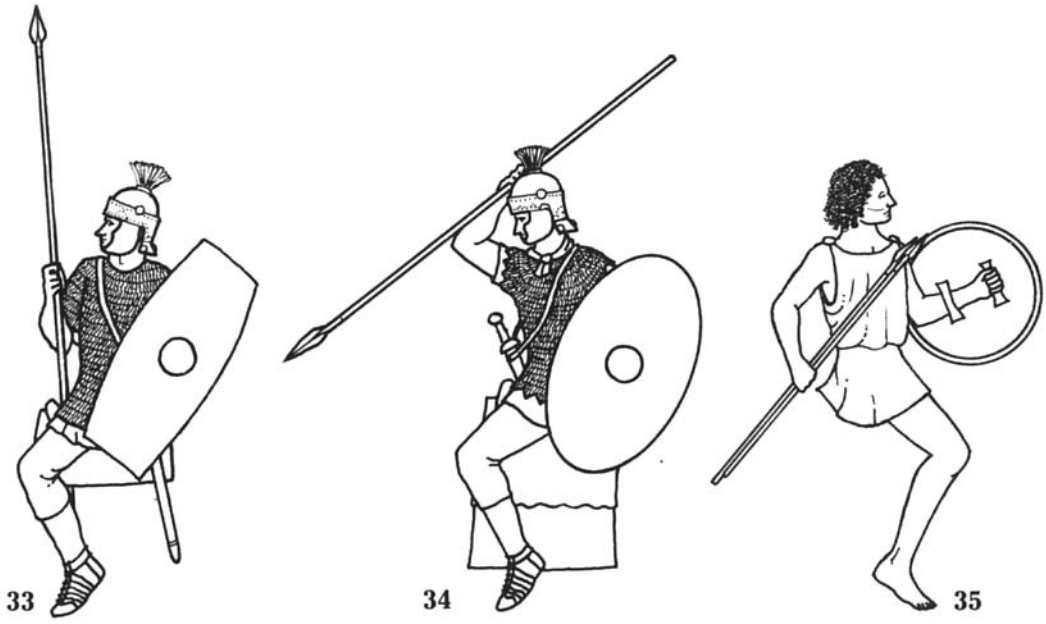
A rather primitive saddle was in use. This lacked a tree, but was padded to keep the rider's weight off the horse's spine to their mutual advantage. It had thigh rolls in front, but apparently no support behind.

31 & 32. AUXILIARY CAVALRYMEN OF THE EARLY AND MID 1ST CENTURY A.D.

These men differ from earlier cavalry mainly in having a more convenient shield of varying pattern and a more highly developed saddle. The saddle still has no tree, but has four upright supports, one at each corner. These provide support for the hips and thighs, but do not inhibit free movement in the saddle to the same extent as a modern pommel and cantle. This was especially important to mounted javelin men, whose drill called for some almost acrobatic changes of position.

Both have iron helmets, but these are covered in thin bronze sheet with incised decoration. In the case of No. 31, this represents human stylised human hair. No. 31 wears a mail corslet with shoulder pieces, No. 32 a bronze scale corslet without shoulder pieces.

Weapons remained as before. The true oval shield was possibly a little later introduced than that with square ends, but did not replace it. The double shield grip shown is depicted or implied on all monuments, but archaeological evidence for it is so far lacking. It is obviously more convenient for a man who must also grasp reins in his left hand.



33. AUXILIARY CAVALRYMAN OF THE LATE 1ST AND EARLY 2ND CENTURIES A.D.

This man's equipment is taken from Adamklissi. As it differs from that shown on Trajan's Column, it can be assumed to be a slightly older variety still in service. The main changes are in the mail corslet, which now lacks shoulder pieces, and the helmet. The helmet is iron, but plated with more decorative metals. The skull, neck guard and cheek plates are plated with white metal, either silver or tin, and the broad reinforcement running right round is of yellow bronze, as are the domed ornaments above the ears and on the neck guard. The cheek pieces now cover the ears. Crests were not worn in action, except possibly by officers.

34. AUXILIARY CAVALRYMAN OF THE EARLY AND MID 2ND CENTURY A.D.

Except for his crest, this man is identical with the vast majority of Roman cavalry shown on Trajan's Column. His helmet is the same as that of No. 33, but his corslet is shorter and has scalloped edges. His shield is the oval variety currently slowly being standardised on in place of the larger squared end types. He has his sword on the official right hand side rather than the practical left.

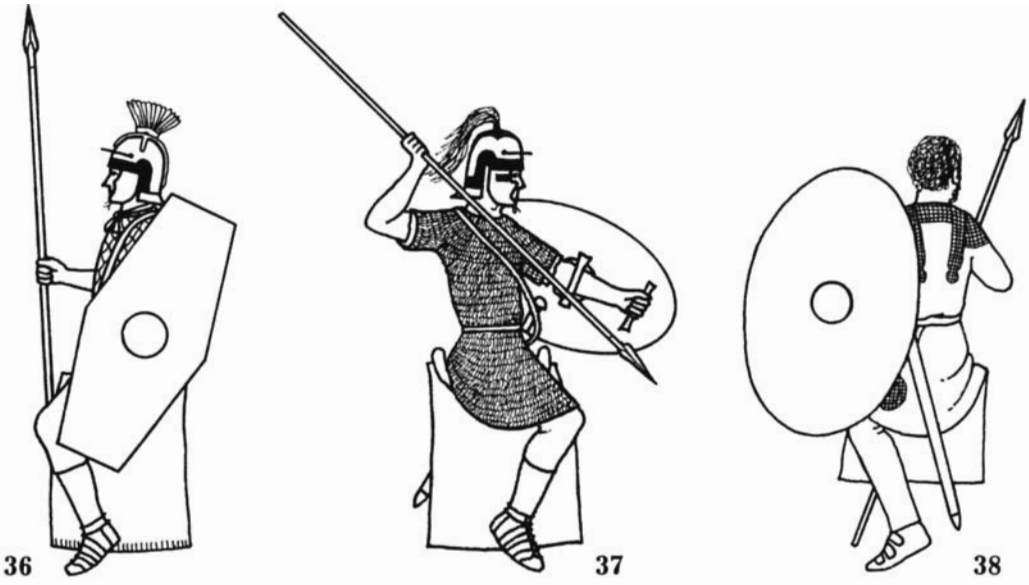
The contemporary cavalry training manual by Arrian tells us that for training and displays coloured jerkins were worn instead of armour. Soft leather jerkins were certainly worn under mail corslets, and one illustration on the Column of sentries outside a headquarters suggests strongly that these had removed their mail to expose the leather. Later Roman and Byzantine practice was for sentries to stand guard without armour in the imperial presence, presumably to reduce the risk of assassination by a corrupted guardsman.

Special helmets with face masks were worn for training and displays, but not in war, so are not dealt with in this book. By mid century, crests were being worn in war and it is possible that cavalry took to this practice before auxiliary infantry.

Although throwing weapons still formed the primary armament of the great majority of Roman cavalry, one unit was equipped during Trajan's reign with the twelve foot long thrust spear called Kontos. The number of units so equipped increased later, but were always heavily in the minority.

35. MOORISH SYMMACHIARIUS

These skirmishing light javelin cavalry, riding bareback without even a saddle cloth or a bridle, were a valued part of the Roman army from the time of Trajan until they merged with the new types of "Illyrian" light cavalry at the end of the 3rd century A.D. Dark, but not negroid, they wore a sleeveless natural wool tunic and carried a small hide shield without boss and and a number of javelins.



36. CAVALRYMAN OF PRAETORIAN GUARD OR EQUITES SINGULARIS 2ND CENTURY A.D.

This guardsman wears a bronze scale corslet with scalloped edges very similar to that of No. 32, but similar figures are also depicted in mail. The hexagonal shield shape may have been traditionally regarded as German. The helmet shown is the most elaborate of the mid 2nd century types and so likely to have been issued to such elite troops. Some were entirely of bronze, others mainly iron but with the peak cruciform skull reinforcement and the part shown black in the drawing bronze. The helmet crest was probably white.

37. HEAVY CAVALRYMAN OF THE LATE 2ND TO 3RD CENTURIES A.D.

This man retains the oval shield, but has a much longer mail corslet split in front and behind below the waist. An alternative would be the standard length scale or mail corslet supplemented by thigh pieces constructed of rawhide lamellae as found at Doura Europos.

The iron helmet has a bronze peak, a bronze plate and knob on top of the scull, and other bronze plated areas which are shown as black on the drawing. The knob is drilled to take a horse tail crest.

At least three units now carried the Kontos, but the great majority continue to use throwing weapons instead.

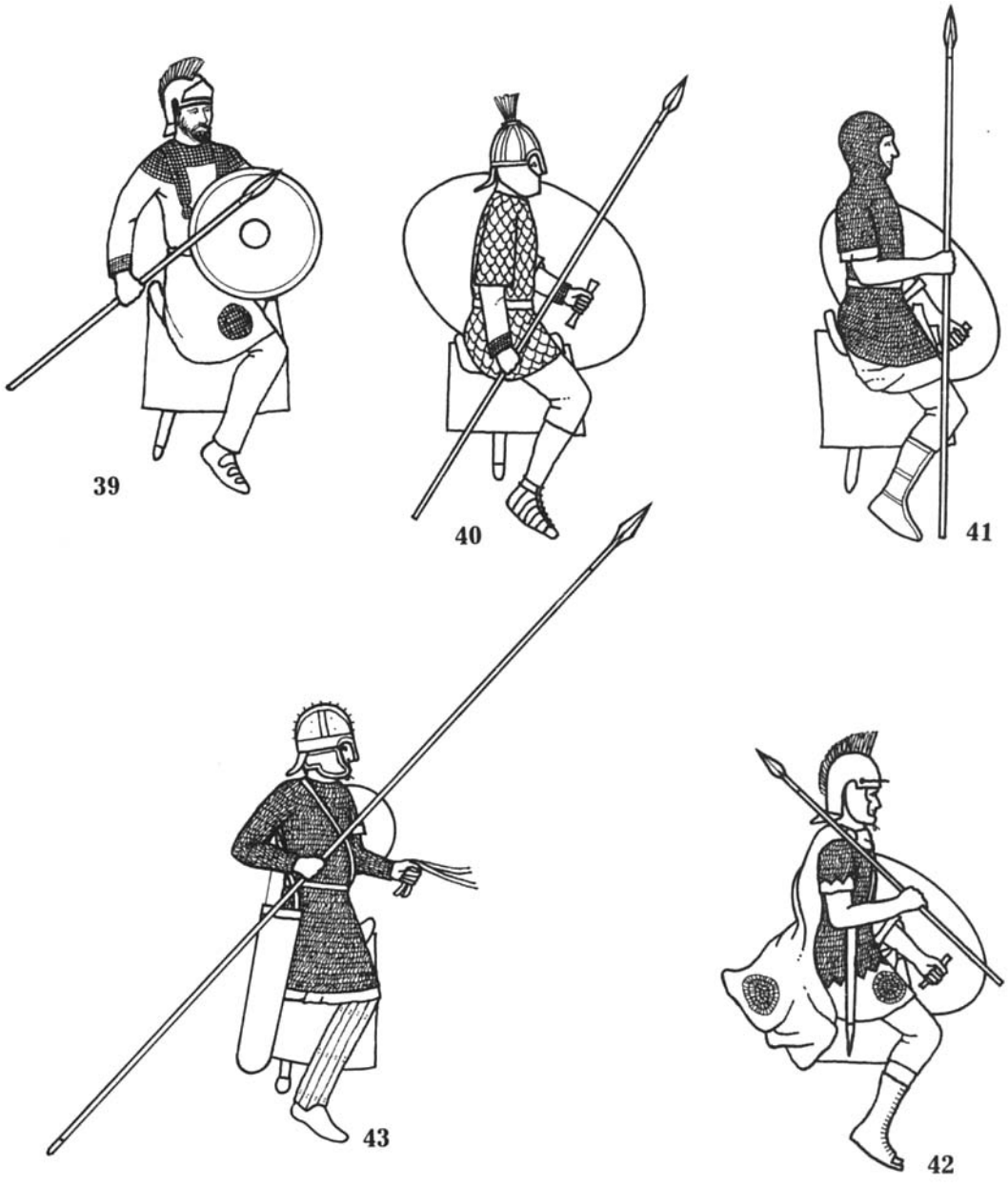
38 & 39. LIGHT CAVALRY OF THE MID 3RD TO 5TH CENTURIES A.D.

The mid 3rd century brought a great expansion of the Roman cavalry arm, and the light cavalry types known collectively as "Illyrian" became very important. This class was made up of Promoti, who were ex-legionary cavalry, Scutarii, who carried especially large shields with which they were expected to defend their horse as well as themselves, Mauri, and Dalmatae.

No. 38 is a Scutarius and No. 39 belongs to the Promoti or Dalmatae. Promoti would be distinguished by having a red rather than off-white tunic, and Mauri by their darker complexion and combining the smaller shield of the Promoti and Dalmatae with the bare head of the Scutarii.

The helmet worn by No. 33 is a rather crude and simple iron type with apparently no cheek pieces and with a rather unusual peak which slopes upward and comes to a point.

These light javelin cavalry were supplemented by a smaller number of horse archer units called Equites Sagittarii. Regulars were probably very similar to the Byzantine light horse archers illustrated later. The irregular Equites Sagittarii Indigenae probably looked more like the Palmyran irregular.



40, 41, 42 & 43. HEAVY CAVALRY OF THE MID 3RD TO EARLY 5TH CENTURIES A.D.

No. 40 combines the large oval shield of the Scutarius with a scale corslet and composite construction iron spangenhelm type helmet. This has unusually large cheek guards and a nasal bar. Several examples have been found in Egypt.

No. 41 is possibly a little doubtful. He is taken from Coussin *Les Armes Romains* but I am not entirely convinced that the mail hood is not a misinterpretation of an usually tidy hair style. However, a very similar figure features in one of the Synagogue wall paintings from Doura, fighting on foot with sword and cropped oval shield, so I am giving the benefit of the doubt.

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No. 42 is taken from the Columns of Theodosius and Arcadius, now mostly disappeared, but sketched by European artists of varying competence before they went. He mostly rides a horse with a textile trapper and properly designed saddle with tree, pommel and cantle. In all but one case he is carrying a Verutum. In the other he is thrusting downwards two handed with a Kontos. The accuracy of the surviving sketches tends to be confirmed by them including accurate representations of No. 9 also armed with Veruta, these in turn being confirmed by a few surviving blocks.

No. 43 is my own hypothetical reconstruction of a Roman Clibanarius based on known late Roman and Byzantine elements. He wears another type of late Roman iron helmet which was to become favoured by barbarian kings. It incorporates a combined nasal bar and eyebrow reinforcement. His long sleeved mail corslet is supplemented by iron splint armour for the lower leg, and he is armed with Kontos, composite bow and sword. He has a small round shield strapped to his upper arm.

There were two types of unusually heavy Roman cavalry, Clibanarii, who used shields, and Catafractarii, who did not. Descriptions of Catafractarii in Ammianus and Julian make it quite certain that they were identical to the Palmyran type described later. The use by Clibanarii of shields and the use of the name of the somewhat lighter Persian heavy cavalry implies to me that they must have been generally similar to these, with rather lighter body armour than Catafractarii, with bow instead of Kontos alone, and riding partially instead of fully armoured horses. Such troops would have made a good link between the near invulnerable but ponderous trot-charging Catafractarii and the more mobile conventional cavalry, and a little later were to provide the main striking force of the Byzantine army.

Incidentally, I would be glad if readers would refrain from quoting Eades' *JRS* article "Roman Mailed Cavalry" at me until they have checked his references and noted the parts that he chose not to mention. His almost perverse insistence in the face of overwhelming evidence to the contrary that only Catafractarii among Roman cavalry wore metal body armour should in any case have long since destroyed his general credibility, but the article continues to be referred to in scholarly footnotes as an authority on cataphract cavalry in spite of other equally dangerous errors.

44, 45, 46 & 47. ROMAN INFANTRY OFFICERS

Up to the 1st century A.D., Centuriones may have been dressed and armed pretty much like their men except for their crest and greaves, but their is no definite evidence to confirm this. From then on, they seem to have been allowed some latitude in dress and armour, as a number of different outfits are depicted on monuments.

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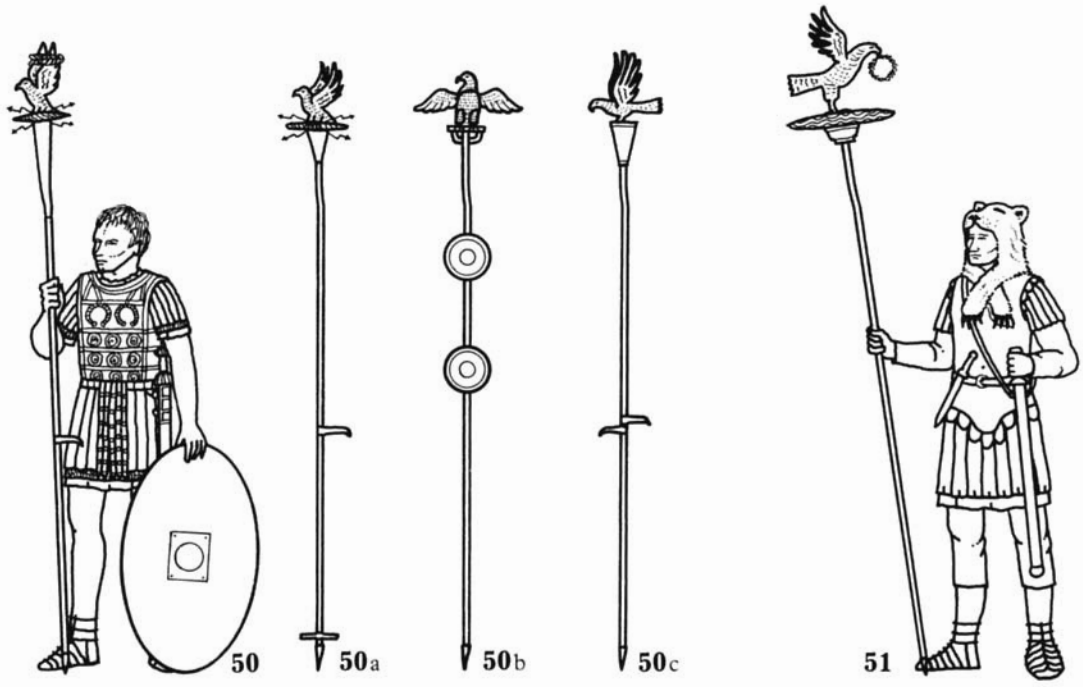
Alternatively, this may represent differing regimental practices. No. 44 is fairly typical. He wears a short mail corslet over an undergarment with attached Pteruges, but could equally well have been shown in scale instead of mail. He wears bronze greaves. Unlike the Greek variety, these were not sprung on to the leg, but secured by straps. His transverse helmet crest and vine cudgel are the things that really identify him as a Centurio. An oval shield like that of the next figure is sometimes shown. It is not certain just how long this dress remained in use. It may have lasted until that of the next figure came in, or there may have been a time when legionary Centuriones wore the Lorica Segmentata, and a more normal box crest.

No. 45 had arrived by the mid 2nd century A.D. and may have been around somewhat earlier. He wears a moulded cuirasse of either bronze or rawhide. The presence of shoulder pieces inclines me to to favour bronze. Pteruges are worn at shoulder but not at hip, the transverse crest has been replaced by a box crest, and the new standard curved oval legionary shield is carried. However, the shield type would probably have varied with the kind of unit, as we have an early 4th century monument depicting a similar officer but with contemporary helmet and the later large oval shield. Archaeologists have also found a helmet very similar to that of No. 9, but with a crest of the same shape made of silver plated metal sheet. This is conjectured to have belonged to a 4th or 5th century Centenarius, as the Centurio was by then called.

No. 46 represents such a man, but the size of his shield and whether he wore breeches or long trousers would depend on his unit.

No. 47 is a typical senior officer of the rank of Tribunus or above. He wears a moulded bronze cuirasse, Pteruges at shoulder and hip, and a bronze Attic helmet with an imposing crest. There was little change during the period we cover, but by the 4th century A.D., the shield would be that shown for the Centenarius, and long sleeves and breeches or trousers would be worn on most occasions.

Officers' uniforms were mostly the same colour as those of rankers, though of better quality cloth and more ornately decorated. Helmets, weapon hilts and scabbards were often decorated with silver or gold, depending on rank, but helmet crests, though larger, were the same colour as those of rankers. Cloaks were probably the standard colour for Centuriones, white at first for tribunes, and scarlet for senior officers, but by the 4th century A.D., all regimental officers wore the standard yellow-brown, though with purple decoration. When trousers were introduced, those of officers were of fine white wool, not brown like those of rankers. The senior officers waist band was red.



48 & 49. ROMAN CAVALRY OFFICERS

48 is the officer equivalent of 30 to 36. However, his shield could vary in accordance with the normal type used by his unit, and he might substitute mail for scale armour. With long sleeves and possibly trousers, he could also match 38, 39 and 40.

49 is taken from the same source as 42, but could also match 38, 39, 40, 41 and 43. It seems likely that officers of Catafractarii units would have had to wear very similar outfits to rankers to survive, and this might also apply to Clibanarii. They could have been distinguished by more ornate crests.

50. ROMAN AQUILIFER UP TO THE MID OR LATE 2ND CENTURY A.D.

This is based on the tombstone of Gnaeus Musius, Aquilifer of Legio XIV Gemina but is fairly typical. He wears a mail shirt, over which is worn a soft leather jerkin, probably dyed, with attached Pteruges at shoulder and waist. On top of this is a frame work of leather straps supporting metal decorations, possible rewards for valour. He wears a Cingulum.

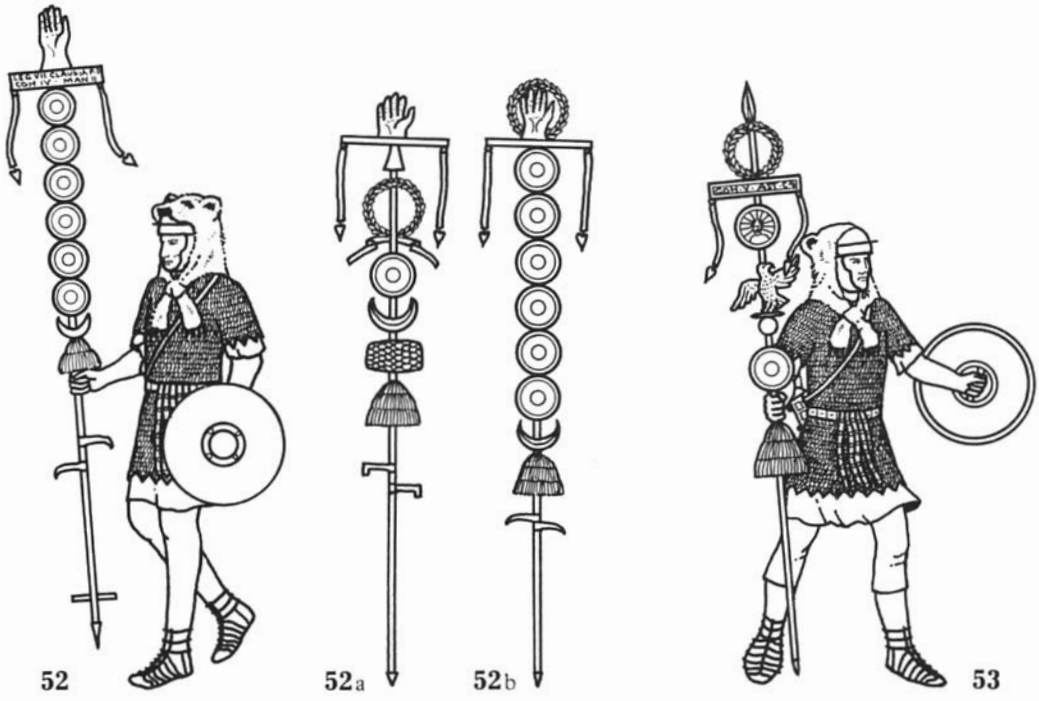
Some other Aquiliferi depicted on monuments differ in wearing mail or scale corselets over the Pteruged undergarment instead of under it. Paul postulates that this is field service dress as opposed to ceremonial dress, but I am not completely convinced. Some such corslets are depicted with shoulder reinforces. Shields are not always shown.

All Aquiliferi of this period are depicted bare headed, not in the helmet plus animal skin hood worn by other standard bearers.

The kind of Aquila standard carried varied. 50a depicts the most usual early imperial type, differing from that of the main figure in lacking the wreath around the wing tips, which possibly commemorates some special achievement. 50b is late republican, one of the standards lost by Crassus to the Parthians and later returned to Augustus. It is the only head-on depiction. 50c is also late republican, belonging to a Legio of Mark Anthony.

51. ROMAN AQUILIFER OF THE LATE 2ND TO 5TH CENTURIES A.D.

The Aquila and headgear are taken from a monumental carving thought to be originally of Marcus Aurelius but reused in the Arch of Constantine. The remainder of the figure is based on normal late imperial legionary



52 52a 52b 53

equipment. Note that the bear skin is just a hood and does not hang far down the back. The wreath in the eagle's beak is probably a special unit distinction.

52, 53 & 54. ROMAN SIGNIFERS UP TO THE MID OR LATE 2ND CENTURY A.D.

52 is the Signifer of a legionary Manipulus. He is distinguished from an auxiliary Signifer by wearing a bear skin hood with face mask over his helmet. The various objects attached to the staff of the standard are distinctions won in action, so vary from Legio to Legio or from auxiliary Cohorts to auxiliary Cohors. 52a and 52b are other examples, but the variation between units could be practically infinite. Various guesses have been made at the symbology, but little that is concrete has emerged. However, it is pretty certain that a hand symbol at the top indicates a manipular standard, the Latin for hand being Manus. The danglers at the ends of the crossbar are coloured ribbons weighted at the ends with silver vine or ivy leaves. The beehive shapes are probably of cloth strips.

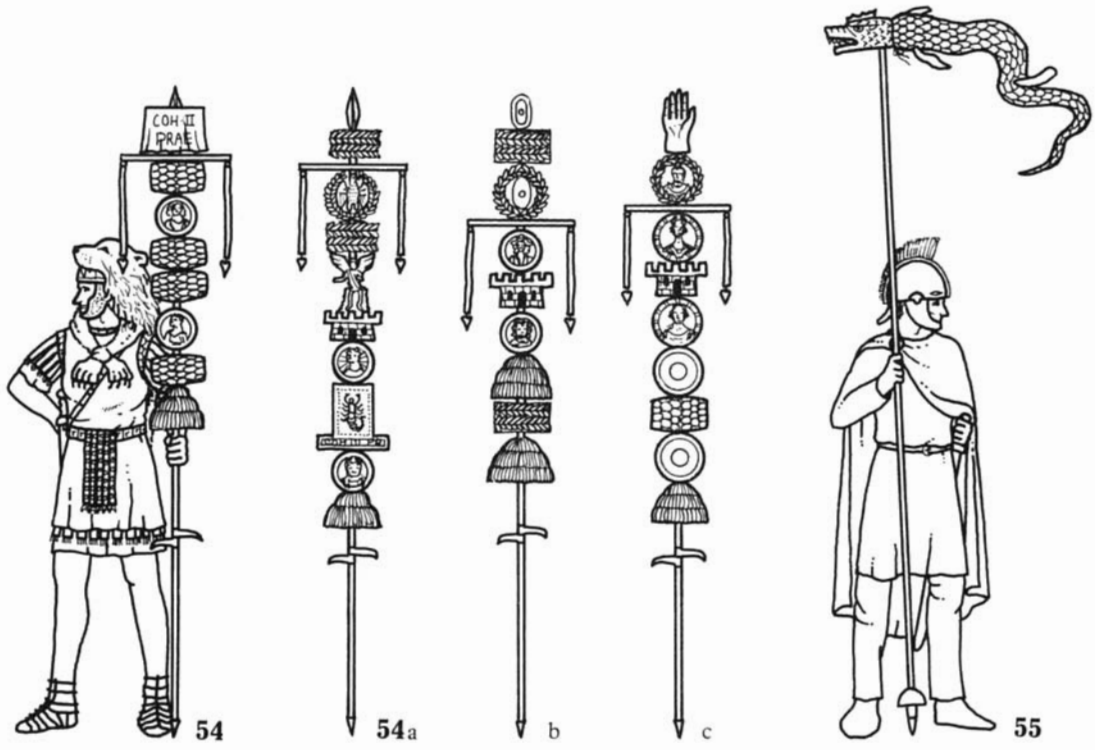
53 is the Signifer of an auxiliary Cohors. His wolf or bearskin headdress lacks the face mask, and the Signum is distinguished from that of a Manipulus by substituting a spear point for the hand.

54 is a praetorian Signifer. His headdress is a lion skin with mask. He wears an overgarment, apparently of cloth, over his armour. His standard, like that shown as 54a, is the Signum of a Cohors. 54b may also belong to a Cohors, but 54c belongs to a Manipulus. Signa topped by spread eagles may also belong to praetorian Cohores. Shields are not always shown, but are usually the small round types shown, though the standard oval and more fancy shapes are also known.

At least one auxiliary Signifer is depicted with his soft leather jerkin over his mail instead of under, in the same way as 11.

55. ROMAN DRACONARIUS OF THE LATE 2ND TO THE 5TH CENTURIES A.D.

The Draco or dragon replaced the spear head-topped Signum as the special standard of the Cohors, though the hand-topped version may have been retained for the Manipulus or Ordo as it was now called. The new



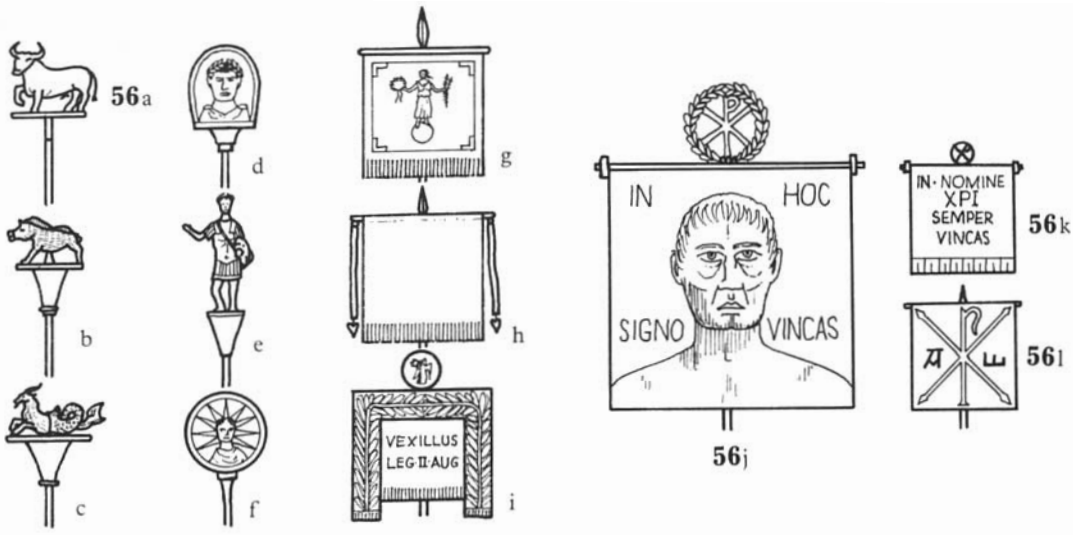
small Legiones appear to have no longer been split into Cohortes, so the standard bearer is shown dressed as a soldier of an Auxilium. The Draco had a silver head and cloth "windsock" body.

56. OTHER ROMAN STANDARDS

56a, 56b and 56c are animal badges associated with particular units and carried by men dressed similarily to those carrying a Signum or Draco. Like the rest of the standards shown here, they were carried on an otherwise bare pole. 56d, 56e and 56f are Imagines, depicting the reigning emperor. The first is of 1st century A.D. date, the second is early 4th century A.D., and the third is probably 3rd century A.D. from the solar crown of the Imago. Infantry Imaginiferi are depicted dressed similarily to praetorian and auxiliary Signiferi, legionary Aquiliferi and Draconarii of the same period.

56g, 56h and 56i are Vexilla, flags hung from cross bars. The first one is an actual example from Egypt, made of crimson cloth with a figure in natural colours standing on a golden globe. The L shapes in the corners are also gold. The second is an alternative shape found as frequently on monuments as the first, and almost certainly would be embroidered with a similar sort of design. Both of these could be used either by a cavalry unit or by a major detachment from an infantry unit for service in another theatre. Those of cavalry were often rather smaller. It is possible that these smaller Vexilla were those carried by individual Turmae, and that a full cavalry Ala or Vexillatio had the bigger variety. The third is a monumental representation from the northern frontier zone of Britain. The disk replacing the spear point at its top was probably metal and depicts a winged victory presenting a wreath of laurels, a favourite piece of symbolism. Infantry Vexilliferi dressed like Imaginiferi.

56j is the famous Labarum of Constantine I. 56k and 56l are later, and from the size they are depicted, smaller versions. The orginal was of purple cloth embroidered with gold thread and precious stones and was probably carried by the Candidati as the senior guard unit. The Latin translates as "In This Sign, Conquer", a reference to the miraculous cross allegedly seen in the sky on the eve of the decisive battle before Rome. The second Labarum translates as "In The Name of Christ Always Conquer". The size of the original Labarum may have necessitated it being carried on foot.



Cavalry standard bearers, unlike infantry, seem to have dressed identically to normal rank and file, and carried the normal shield type for their unit. Each constituent Turma had a Vexillum. It is not certain whether an Ala had a Vexillum or a Signum, but a Vexillatio must have had a Vexillum from its name. At least some Alae had an Imago, 56f being that of the Ala Petriana. By the 4th century A.D., the light so-called "Illyrian" cavalry, Catafractarii and possibly Sagittarii units were using the Draco instead of the Vexillum.

57. ROMAN MUSICIAN UP TO THE MID 2ND CENTURY A.D.

Infantry musicians dressed the same as the Signiferi of their units up to the mid 2nd century A.D., then as Draconarii. The instruments stayed the same. That illustrated is the best known, and is called a Cornu, the player being a Cornicen. Its main use was to draw the troops attention to their standards before these were used to signal tactical movements. The Tuba was a long straight instrument like a modern trumpet. The Bucina is believed to have been relatively small and possibly coiled like a bugle. The musical range of the instruments was much less than of modern equivalents, but they could none the less be used in unison to play simple tunes.

Cavalry musicians dressed like rank and file and do not seem to have used the Cornu, instead mainly relying on the Tuba.

58. LATE ROMAN OR EARLY BYZANTINE GUARDSMAN

There are a number of surviving Byzantine colour representations of 4th to 6th century A.D. guardsmen, and these are confirmed in all but colour by 4th and 5th century A.D. sculptures and carved ivory. However, these probably show ceremonial dress and are not necessarily representative of battle equipment. For example, one surviving sculpture shows soldiers in action carrying very similar shields to that of the figure illustrated here, but otherwise dressed exactly as 9a.

The figure depicted here comes from a mosaic of Justinian and his court at Ravenna. He wears a red tunic with purple bands sprinkled with gold ornaments. Around his neck is a gold torque. His trousers are white and his shoes black. His shield is mid-green with golden rim and Chi-Rho symbol, both set with alternate blue and green semi-precious stones. The boss, starting at 3 o'clock and proceeding clockwise, is black, light blue, white or silver, gold, white or silver, light blue. Its centre is red. The light spears carried have decorated shafts. For half their diameter they are gilded for their full length. The other side appears to be alternate 2 inch sections in blue and green, separated by narrow half bands of silver.

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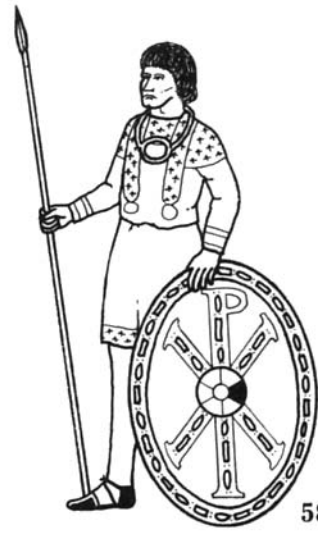

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Two other figures on the same mosaic have light green tunics with gold and red bands respectfully. The formers shield is partly visible and can be seen to be red with a light blue rim and to include a green star of probably ten points. Trousers and spear shafts in both cases are like those of the first figure.

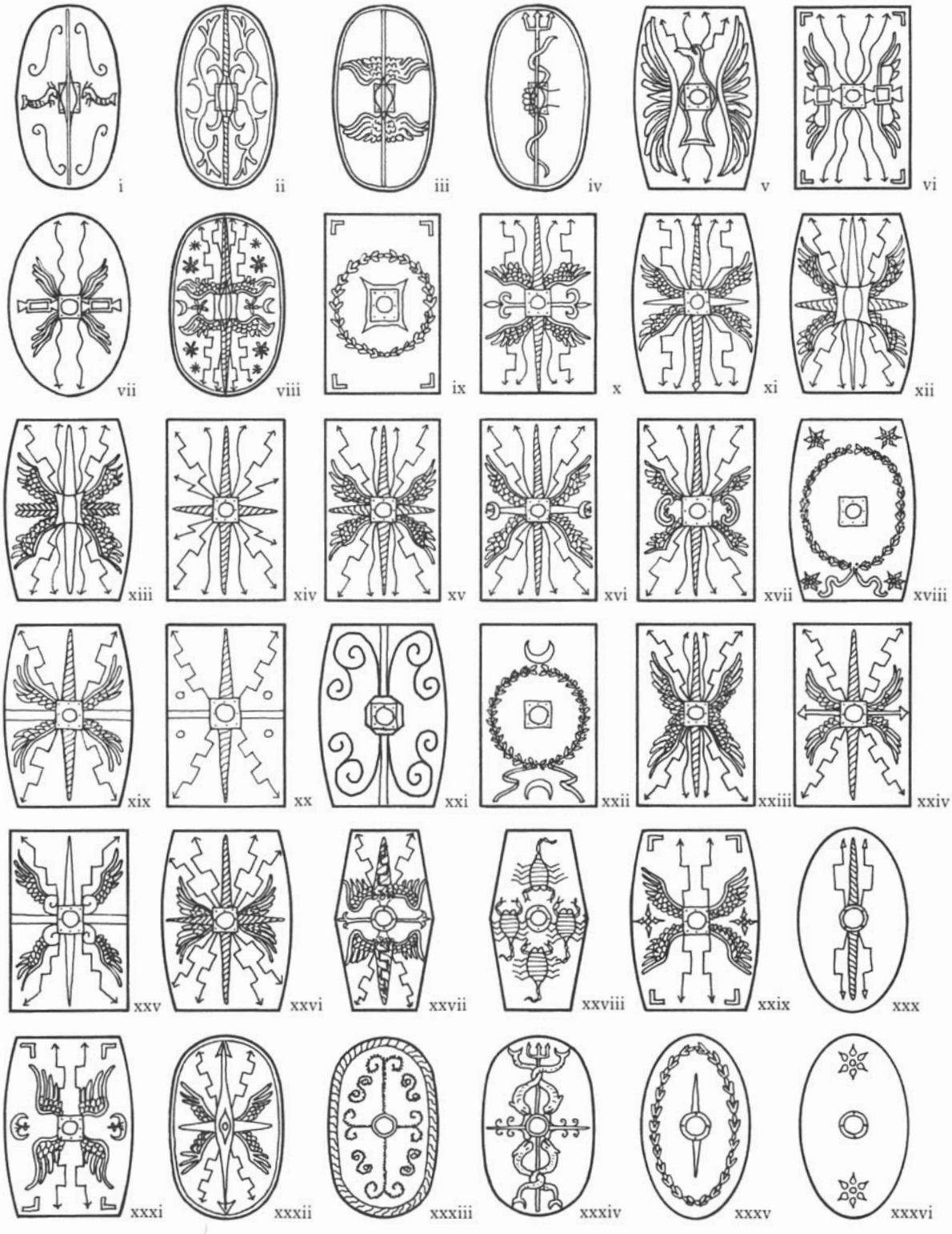
A much later Byzantine manuscript illustration showing the 4th century A.D. court of Julian shows very similar figures, some in pale blue, others in white, both with gold decorations and carrying plain red shields bordered by blue with gold arabesques. Similar figures appear in 4th and 5th century A.D. sculptures and carved ivory with shield types included here as 60 (clxiv), (clxlv), (clxlvi), (clxlvii), (cci) and (ccii).

59. REPUBLICAN AND EARLY IMPERIAL ROMAN SHIELD PATTERNS

We are told by Tacitus of an occasion in which soldiers in a battle between two Roman armies were able to mingle unnoticed with the enemy because they had picked up discarded enemy shields. The late Roman writer Vegetius also says that each unit had shields of distinctive colours, and this is confirmed by the many such shields labelled with unit names in the Notitia Dignitatum, a surviving 5th century A.D. army list. It has therefore long been considered that a similar system of unit shield patterns existed in early imperial times, and it has been suggested that each of the shields on Trajan's Column commemorates the participation of a specific unit in the campaign. The following patterns are based on Paul McDonnell-Staff's drawings from monuments. Paul considers many of the sketches included by Rossi in his *Trajan's Column and the Dacian Wars* to be insufficiently accurate, and does not accept his unit identifications.

Unlike the succeeding era, we known next to nothing of the colouring of these shields. The only early shield to survive with its painting legible is a straight-sided semi-cylindrical scutum from Dura-Europos. This dates from a century later than the type's general abandonment and was found tucked away in a basement armoury. It is painted at the top with an eagle flanked by winged victories and at the bottom by a lion flanked with stars. The area in between is filled with successive rectangular borders, one inside the other, forming a Persian carpet like pattern of such complexity that I dared not inflict it on my artist! This shield seems likely to me to have been an antique specially decorated and kept for parades, and of little value in considering early shield colours.

The only other hints come from a 1st century A.D. painting showing gladiators and a 2nd century A.D. mosaic showing a mythological subject. The gladiators have straight sided scuta painted bright red and yellow, with boldly executed linear whorls in black and white on the red and black and red on the yellow. The mosaic shows soldiers with bronze equipment and white plumes again carrying straight-sided scuta. Both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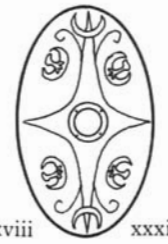
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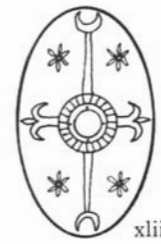
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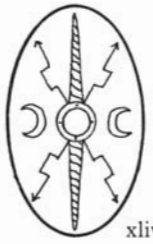
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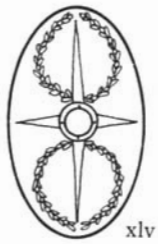
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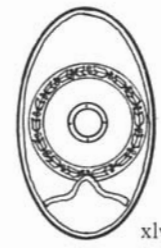
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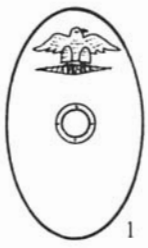
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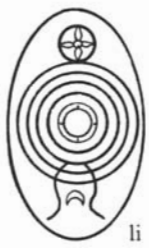
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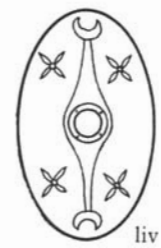
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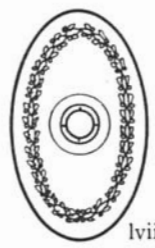
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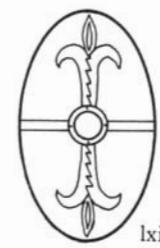
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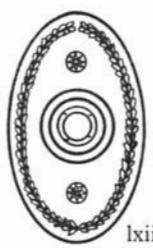
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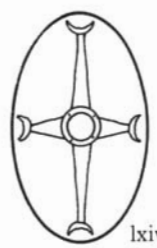
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shields show a black scorpion with claws at top, tail at bottom. One shield has a tan background, the other darker brown to half way down, then pink. The tan shield has a black border, the other a cream border. Scorpion patterns, incidentally, are associated with guard units. The only value of this evidence is of course to show what colours contemporary artists considered acceptable for shields.

It has been traditionally maintained that much of the decoration on early Imperial shields was cut from thin metal sheet and attached to the painted surface. This practice was certainly followed by some Greek hoplites, although it would hinder weapon points from being glanced off. The only archaeological evidence for the practice comes from a shield recently found at Doncaster, which may be auxiliary or a native souvenir. The current situation appears to be that such applique work cannot be ruled out, especially for such items as lightning flash symbols, but that most if not all decoration was painted on.

Funnily enough, while we must struggle for clues on the colour of the fronts of shields, there is fairly ample archaeological and monumental evidence for the backs of many shields being painted a dull faded red.

(i) is a legionary shield from the Arc d'Orange, probably commemorating the repression of a Gallic revolt by Legio II Augusta in A.D. 21. The goat-fish Capricorn emblem is a known badge of that Legio.

(ii), (iii) and (iv) are all carried by men on board a warship featured by a monument probably commemorating the Battle of Actium. The first is carried by a man closely resembling No. 27 except that he wears an attic helmet and who is standing with him on the outrigger outside the bulwarks. The second is carried by an officer very similar to No. 44 except that he substitutes breeches for greaves and has a helmet with attachment for a boxed crest presently removed. The third is carried by a man wearing an attic helmet but whose other details are obscured. No. 27 has his shield facing away. Normal practice was for marines to be supplemented by legionaries for major battles, but in my opinion the symbolism of (iv) points to marines. (iii) seems likely to be legionary.

(v) and (vi) are from Mainz and are dated to about 75 A.D. The two Legiones in garrison there at that time were Legio I Adiutrix and Legio XIV Gemina. The markings Paul interprets as the inner pair of lightning flashes of (vi) are very worn, and in my opinion could equally be a bird body like that of (v).

(vii) is from the tombstone of Gnaeus Musius, an Aquilifer of Legio XIV Gemina. Its resemblance to (vi) is probably too close for coincidence.

(viii) is a Praetorian shield from the late 1st century Cancellaria relief. Paul suggests that it depicts a thunderbolt against a night sky, so may originally have had a black or dark blue ground with white or silver stars, moon and wings, yellow or gold thunderbolt and lightning flashes. This would certainly have been impressive.

(ix) is from Trajan's Column and is identified by Rossi as belonging to Legio XXX Ulpia Traiana, mainly because its symbolism differs in style from that of all other legionary shields on the Column, so in his opinion may belong to the only relatively new Legio present.

(x) to (xxv) are also legionary shields from Trajan's Column. (xviii) and (xxii) both show the type of symbolism Rossi relates to Legio XXX, so tend to cast cold water on the idea. (xxi) is suggested by Rossi to be a meaningless design concocted to replace the insignia of the disgraced Legio XXI Rapax. Examination of the original shows no evidence of recutting, and there is also no real evidence that the Legio took part in Trajan's wars or was disgraced. It could be more plausibly held that the design belongs to a Legio of non-Roman origin, so might be that of Legio XXII Deiotriana, originally raised by a client king. (xii), (xiii) and (xxi) appear to have central spines, and it is possible that some other shields have spines concealed by a central thunderbolt decoration. (xiv) may have a thunderbolt down the centre or may not, as this cannot be seen from the original presentation. Similarily, (xxv) may have a thunderbolt instead of a plain spine. Rossi identifies (xxiii) as Legio I Minervia from the ram standard accompanying it. This is possible, but as there were fewer animal totems than Legiones, cannot be taken as certain.

(xxvi) is probably a Praetorian shield, as it is associated on the column with Praetorian standards. Each Praetorian cohort probably had its own shield design.

(xxvii) and (xxviii) are both carried by guard cavalry on a Trajanic frieze. Paul suggests that the first may be Praetorian cavalry, the second Equites Singulares.

(xxix), (xxx) and (xxxi) are all shown on Trajan's Column being carried by men in auxiliary rather than legionary armour and equipment. Paul suggests that they all belong to units of Pedites Singulares. I accept this in the case of (xxx), but prefer to regard the others as belonging to Cohors Scutata. Similar troops are shown with straight-sided Scuta. (xxx) is frequently depicted in close attendance on the Emperor.

(xxxii) is from the Antonine relief of Praetorian officers and men now in the Louvre. Three other shields with different designs are mostly obscured.

(xxxiii) is based on one of the obscured shields completed with a shield that appears on the base of the Column of Antoninus Pius carried by a Praetorian. The linear decorations appear to be daisy chains with larger flowers at the ends. The other two shields both have a broad rim divided into boxes with a flower in each box. One has a lightning symbol running down inside the rim, the other something rather more like (viii).

(xxxiv) is from a damaged relief of Marcus Aurelius reused in the Arch of Constantine. Its shape is now a little uncertain, and could have been oval or a curved-side semi-cylindrical Scutum. It is carried by a legionary, who in view of the trident and dolphin symbolism may belong to one of the Legiones raised from marines such as I or II Adiutrix.

(xxxv) to (lxii) are auxiliary infantry shields. (xxxv) appears to have a short spine but is also depicted without it. (xxxix) also appears without the linear swirls. (xliv) does not always have the half moons. (lix) appears without the wreath. Two variants of (lix) appear with wolfskin headdress infantry like No. 15. Both have two extra crescents facing the sides at each end. One lacks ribbon ends.

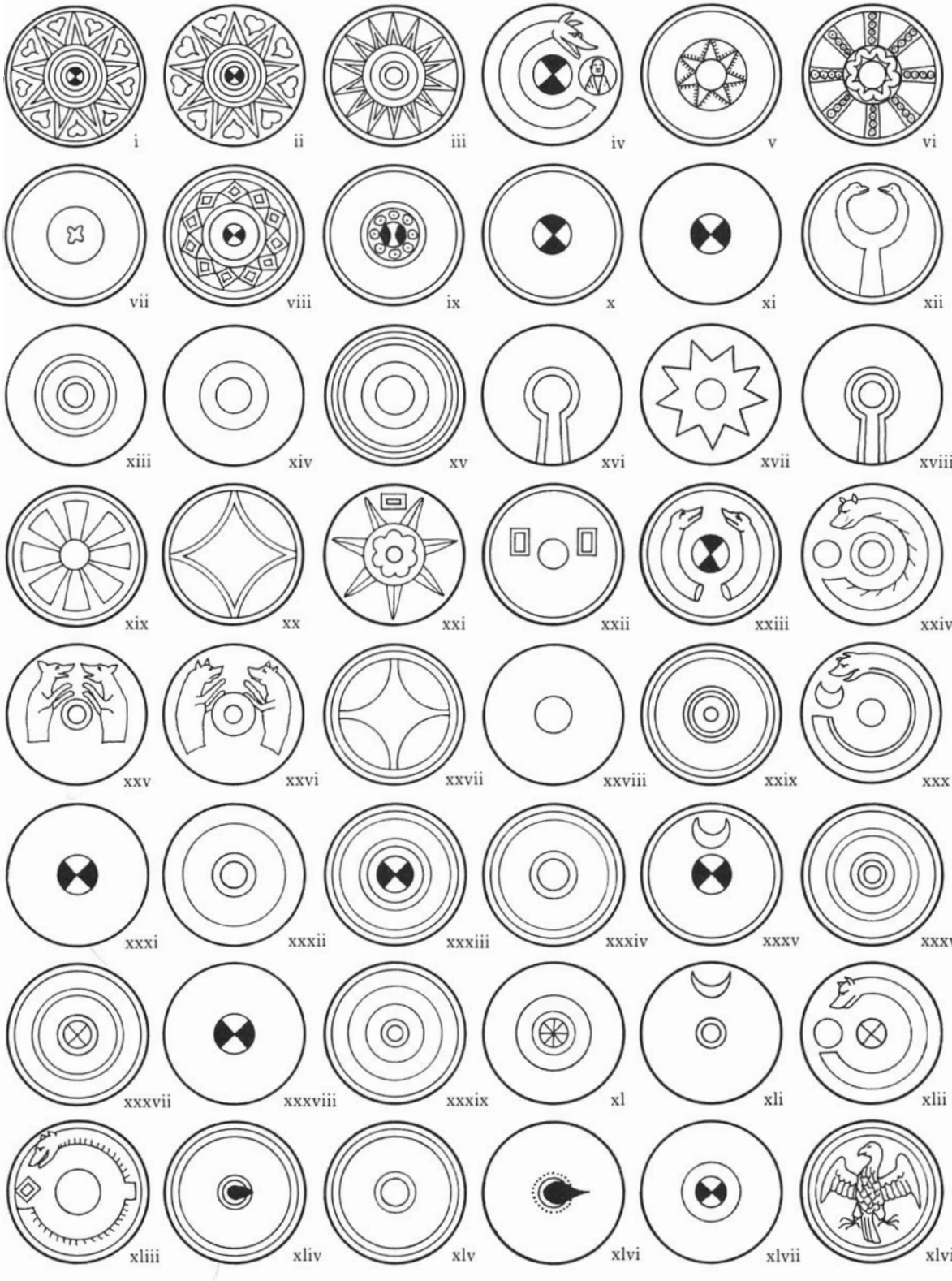
(lxiii) to (lxxiv) are mounted auxiliary shields. (lxv), (lxviii) and (lxxii) also appear carried by dismounted men, so may belong to a Cohors Equitata rather than a cavalry Ala. When (lxviii) appears dismounted, it lacks the central spine.

60. LATE IMPERIAL ROMAN SHIELD PATTERNS

The primary source for these is the Notitia Dignitatum. This is a working document of the western Roman administration containing insignia and responsibilities of important dignitaries, lists of army units and their dispositions and unit shield patterns. It is firmly dated by internal evidence to about 420 A.D. for western information, and a little earlier for eastern. The shields include nearly all the western field army units and many of the eastern field army infantry. Eastern cavalry and the whole empire's border troops are omitted, but the inclusion of units recently promoted from border to field army status indicates that shield patterns were similar.

All surviving manuscripts are copies of a single original called the Codex Spirensis, which has disappeared. The two manuscripts we shall be dealing with are that in the Bodleian Library at Oxford dating from 1436, and that at Munich dating from shortly before 1550. The Munich copy is the second of two made at roughly the same time, the first of which was rejected because the illustrations were insufficiently faithful. Because of this rejection, the second copy had the illustrations traced from the Spirensis on oiled paper. It was this version of the illustration that appeared in Otto Seeck's modern edition.

I have seen the Oxford copy and have colour transparencies available to work from. I have not seen the Munich copy and must rely on the colour key provided by Seeck to his line drawings. Unfortunately, the shield colours often differ. Seeck always notes the very dark green of the Oxford copy as yellow, even where it adjoins yellow. It is also apparent that he changed his hatchuring system for blue part way through but did not amend the key! I therefore quote both the Oxford colours and Seeck's, taking the latter's key at face value. You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should note that where he indicates dark red, he may mean blue. It is likely that all copiers made occasional mistakes, Seeck among them.

The following patterns include all those of the western field armies, a selection of especially interesting ones from the east, and all those I have been able to find in other contemporary art, these serving as a check on the copying of those from the Notitia. The two Notitia versions are distinguished as "O" and "M".

(i) Domestici Equites. Senior unit of guard cavalry.
- O: Gold rim, hearts and star. Red centre spot. Medium blue band round centre spot and ground between rim, hearts and star. Other markings on points of star and circles around centre outlines only, probably representing engraving.
- M: No colours specified. Centre spot is divided in quarters. No internal markings on points of stars.

(ii) Domestici Pedites. Infantry equivalent of (i), and only guard infantry.
- O: As (i), except no rim, blue extending to edge.
- M: As (i), except rim has wavy inside edge with two waves between each pair of star points.

(iii) Scola Scutariorum Prima. Guard cavalry, probably light like other Scutarii.
This identification and the next six are conjectural, based on the premise that the seven shields forming part of the insignia of the Magister Officiorum represent the seven guards units originally under his control in order of their original seniority.
- O: Red rim, dark green ground, gold star, white centre spot, dark green band around centre spot. Other markings on star outlines only, probably engraving.
- M: Not specified.

(iv) Scola Scutariorum Secunda. Guard cavalry, probably light.
- O: Gold monster and medallion on light blue ground. Centre quartered red and white.
- M: Not specified. Monster has scaled body and medallion has meaningless pattern instead of portrait.

(v) Scola Armaturarum Seniorum. Guard cavalry, probably heavy.
- O: Red except for gold centre plate apparently engraved or embossed with star and with dark green centre spot.
- M: Unspecified.

(vi) Scola Gentilium Seniorum. Guard cavalry recruited fron non-citizens. Probably heavy.
- O: Red rim and centre spot, dark green ground, gold rays and outer boss with engraved or embossed decoration.
- M: Unspecified.

(vii) Scola Scutariorum Tertia. Guard cavalry, probably light.
- O: Red rim, dark green ground, gold boss with black cross at centre.
- M: Black rim, white ground, gold boss with white cross at centre.

(viii) Scola Scutariorum Sagittariorum. Guard cavalry. Light horse archers.
- O: Red rim, rest gold with embossed or engraved decoration except for gold and black quartered centre spot.
- M: Red rim, then band of white, then broad gold band with star decoration as O, then white (or silver?) boss with engraved rings, the inner quartered with a cross.

(ix) Scola Scutariorum Clibanariorum. Guard extra-heavy cavalry. Seeck suggests that the title may be an error for Scola Sagittariorum Clibanariorum. As other Clibanarii had bows but not large shields, this is reasonable. However, large shields are also inapplicable to horse archers, so it is more likely that Scutariorum had come to have a second meaning of "Guards".
- O: Red rim, medium blue ground, gold boss with decoration, red and white quartered centre spot.
- M: Red rim, medium blue ground, gold decorated boss with white outer border, white centre spot quartered but no red shown.

(x) Comites Seniores. Vexillatio Palatina. From evidence in Ammianus Marcellinus, possibly light horse archers.

O: Red rim, pale blue ground, centre quartered pale blue and white.

M: Red rim, red ground, red and white quartered centre. As the rim is shown more densely hatched than the rest, I strongly suspect that Seeck forgot his own system and inadvertently substituted red for blue elsewhere. I should be pleased to hear from any reader that can confirm or deny this!

(xi) Equites Promoti Seniores. Vexillatio Palatina. Light cavalry.

O: Red ground, with pale blue and white quartered centre.

M: Same, except blue may be intended to be darker.

Also

Equites Promoti Iuniores. Vexillatio Comitatensis. Light cavalry.

O: Pale blue ground, with black and white quartered centre.

M: Red ground, with black and white quartered centre.

(xii) Equites Brachiati Seniores. Vexillatio Palatina.

O: Red rim, dark green ground, white figure.

M: Red rim, yellow ground, white figure.

(xiii) Equites Batavi Seniores. Vexillatio Palatina.

O: From the outside inwards, red, yellow, pale blue, medium blue, white.

M: Red, yellow, red, yellow, white.

(xiv) Equites Cornuti Seniores. Vexillatio Palatina.

O: From outside inwards, white, red, pale blue.

M: Same.

(xv) Equites Cornuti Iuniores. Vexillatio Palatina.

O: From outside inwards; Pale blue separated from pale blue by a medium blue or purple line, yellow, dark green, yellow, red.

M: Rim red, next band blue, centre red. All bands between blue and centre are shown separately but coloured yellow.

(xvi) Equites Alani. Vexillatio Palatina.

O: Red key hole shape on white ground. Border round key hole also white.

M: Same.

(xvii) Equites Batavi Iuniores. Vexillatio Palatina.

O: Pale blue ground, white star and dark green centre.

M: Blue ground, white star and yellow centre.

(xviii) Equites Constantes Valentinianenses Seniores. Vexillatio Palatina.

O: Red ground, white key hole shape with pale blue border and medium blue centre spot.

M: Same, except that centre spot is yellow and key hole border is shown as red but apparently lighter than ground. See remarks under (x)!

(xix) Equites Armigeri. Vexillatio Comitatensis. Something of a mystery, as there are also units of Armigeri Seniores and Iuniores with their own different shield patterns.

O: Pale blue rim, yellow ground and centre spot, red spokes.

M: Yellow ground and centre spot. Rim and spokes both hatched as red, but spokes much darker.

(xx) Equites Primi Gallicani. Vexillatio Comitatensis.

O: Red rim, dark green ground, light blue centre outlined in yellow.

M: Same, except that ground and outlining of centre are both shown as yellow.

(xxi) Equites Octavo Dalmatae. Vexillatio Comitatensis. Light cavalry.
O: Ground, clockwise halves of star points, star disk and centre of box white, scalloped shape inside star disk dark green, and other halves of points, box and centre spot light blue.
M: All white, except that scalloped shape and centre spot are both shown yellow.

(xxii) Equites Dalmatae Passerentiaci "Dalmatian Sparrows". Vexillatio Comitatensis. Light cavalry.
O: Field and interior of boxes dark green, boxes light blue, rim red, centre white.
M: All but rim shown as yellow.

(xxiii) Equites Mauri Alites "Swift Moors". Vexillatio Comitatensis. Light cavalry.
O: Dark green ground, red rim, yellow ostrich necks and heads, and centre quartered light blue and black.
M: All but rim shown as yellow

(xxiv) Equites Honoriani Taifali Iuniores. Vexillatio Comitatensis.
O: White ground, red centre disk, light blue monster, ball and centre spot.
M: White ground and centre spot, red monster, ball and centre disk.

(xxv) Equites Honoriani Seniores. Vexillatio Comitatensis.
O: Red ground, light blue wolves, yellow centre, possibly with red centre spot.
M: Red ground, wolves probably natural colour, yellow centre.

(xxvi) Equites Mauri Feroces "Ferocious Moors". Vexillatio Comitatensis.
O: White ground, red wolves, dark green disk with yellow centre spot.
M: White ground, wolves probably natural colour, yellow centre spot.

(xxvii) Equites Constantiani Felices "Faithful Constantinians". Vexillatio Comitatensis.
O: From outside inwards, white, light blue, white, red.
M: Same.

(xxviii) Equites Scutarii Seniores. Vexillatio Comitatensis. Light cavalry. May be the same as the Equites Scutarii Aureliaci.
O: Red ground, yellow centre spot.
M: Same.

(xxix) Equites Stablesiani Seniores. Vexillatio Comitatensis. Also known as Equites Stablesiani Africani to distinguish it form a second Stablesiani unit that joined it in Africa and which then became known as the Equites Stablesiani Italiciani from its previous posting.
O: From outside inwards, white, yellow, red, yellow, pale blue, dark green, pale blue.
M: From outside inwards, white, yellow, black, yellow, red, yellow, white.

(xxx) Equites Marcomanni. Vexillatio Comitatensis.
O: White ground, yellow monster and moon, light blue centre spot.
M: Same, except that centre spot is shown as red.

(xxxi) Equites Armigeri Seniores. Vexillatio Comitatensis.
O: Dark green ground, centre quartered white and red.
M: Yellow ground, centre quartered but colour not specified.

(xxxii) Equites Sagittarii Clibanarii. Vexillatio Comitatensis. This is the only Clibanarii unit of the western empire, so the only one whose shield could appear. The shield and the indication in its title that it is bow armed is the main evidence for the theory that Roman clibanarii were lighter than catafractarii, who did not carry shields, and were instead equivalent to Sassanid Persian clibanarii.
O: From outside inwards, dark green, yellow, mid-blue, white.
M: White centre, but all other bands shown as yellow.

(xxxiii) Equites Sagittarii Parthi Seniores. Vexillatio Comitatensis. Light horse archers.
O: From outside inwards, red, yellow, mid-blue, yellow, dark green, black and white.
M: From outside inwards, black, yellow, white, yellow, black, yellow and white.

(xxxiv) Equites Primo Sagittarii. Vexillatio Comitatensis. Light horse archers.
O: From the outside inwards, red, white, red, white, pale blue.
M: Red, white, black, white, red.

(xxxv) Equites Secundo Sagittarii. Vexillatio Comitatensis. Light horse archers.
O: White ground, yellow rim, mid-blue moon, centre quartered red and white.
M: Same, except that moon is shown as red.

(xxxvi) Equites Tertio Sagittarii. Vexillatio Comitatensis. Light horse archers.
O: From the outside inwards, yellow, pale blue, yellow, dark green, mid blue, white, red.
M: From the outside inwards, yellow, red, yellow, yellow, white, red, white.

(xxxvii) Equites Quarto Sagittarii. Vexillatio Comitatensis. Light horse archers.
O: From the outside inwards, yellow, mid blue, yellow, dark green, yellow, light blue and white.
M: From the outside inwards, yellow, white, yellow, yellow, yellow, quartered but no colour shown.

(xxxviii) Equites Sagittarii Parthi Iuniores. Vexillatio Comitatensis. Light horse archers.
O: Red ground, centre quartered black and white.
M: Same.

(xxxix) Equites Cetrati Seniores. Vexillatio Comitatensis. Title may indicate the use of a small round shield. If so, light cavalry similar to Dalmatae or Mauri.
O: From outside inwards, yellow, pale blue, yellow, mid-blue, pale blue, yellow.
M: From outside inwards, yellow, black, yellow, white, black, white.

(xl) Comites Iuniores. Vexillatio Comitatensis.
O: From outside inwards, mid-blue, dark green, yellow, white with radiating black lines.
M: From outside inwards, pale blue, yellow, yellow, yellow with black lines.

(xli) Equites Sagittarii Iuniores. Vexillatio Comitatensis. Light horse archers.
O: Red ground, pale blue crescent, yellow undifferentiated centre.
M: Red ground, black crescent, white centre disk with yellow centre spot.

(xlii) Equites Cetrati Iuniores. Vexillatio Comitatensis. See remarks for (xxxix).
O: Dark green ground with yellow monster, mid-blue ball, blue and white quartered centre.
M: Yellow ground, monster and ball shown as yellow but with denser hatchuring, blue centre.

(xliii) Equites Honoriani Iuniores. Vexillatio Comitatensis.
O: Red ground and box centre, pale blue rim, yellow monster and box, mid-blue centre.
M: Same, except rim red and and undifferentiated from ground.

(xliv) Equites Armigeri Iuniores. Vexillatio Comitatensis.
O: From outside inwards, red, yellow, red, dark green, dark green, black spike on shield boss.
M: From outside inwards, black, yellow, red, white, white, black spike.

(xlv) Equites Secundi Scutarii Iuniores. Vexillatio Comitatensis. Light cavalry.
O: From outside inwards, red, mid-blue, yellow, pale blue?, black?. The centre is badly stained, so the last two colours are far from certain.
M: From outside inwards, black, blue, yellow, red, white.

(xlvi) Equites Stablesiani Italiciani. Vexillatio Comitatensis.
O: Red with black spike.
M: Red with red spike.

(xlvii) Equites Sagittarii Cordueni. Vexillatio Comitatensis. Light horse archers.
O: White ground, yellow centre disk, black and white quartered centre spot.
M: Same, except centre spot quartered black and yellow.

(xlviii) Ioviani Seniores. Legio Palatina. Senior of the western legiones and second senior over all. Raised by the Emperor Diocletian and famed for its skill with the lead-weighted throwing darts called martiobarbuli.
O: From the outside inwards, yellow, red, pale blue, red.
M: Same, except eagle either white or natural colour.

(xlix) Herculiani Seniores. Legio Palatina. Twin of (xlviii), formed at same time, usually brigaded together, similarly skilled with darts.
O: From the outside inwards, white, yellow, red, black.
M: From the outside inwards, red, yellow, red, white or natural colour.

(l) Divitenses Seniores. Legio Palatina.
O: From outside inwards, yellow, red, yellow, white, pale blue.
M: From outside inwards, yellow, red, yellow, red, blue.

(li) Tungrecani Seniores. Legio Palatina.
O: From the outside inwards, dark green, yellow, red, yellow, white, pale blue.
M: Exactly as (l), an obvious copying error.

(lii) Pannoniciani Seniores. Legio Palatina.
O: Rim, alternate "fan blades" and centre disk red, other fan blades black, centre spot light green, second ring, inner ring and connecting spokes yellow.
M: Same, except that black fan blades and green centre spot are instead depicted as yellow.

(liii) Moesiaci Seniores. Legio Palatina.
O: Rim and alternate "fan blades" red, second ring yellow, other fan blades white, centre disk and centre spot both pale blue.
M: Same, except centre spot yellow.

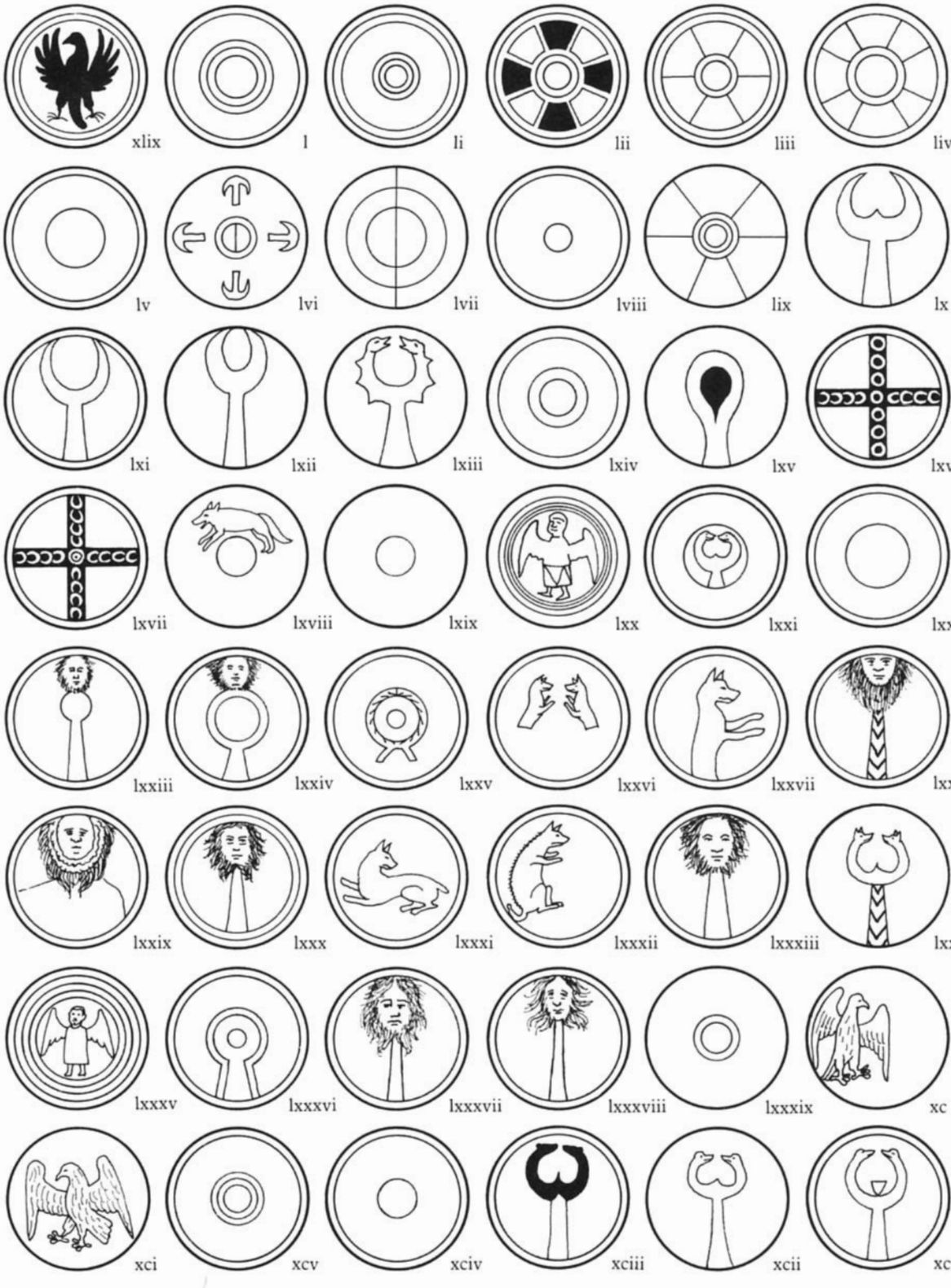
(liv) Armigeri Propugnatores Seniores. Legio Palatina.
O: Rim and border of centre yellow, larger "fan blades" white, smaller light green, centre red.
M: Same, except smaller fan blades yellow, border of centre white, white spot added in centre of red.

(lv) Lanciarii Sabariences. Legio Palatina.
O: From outside inwards, yellow, maroon, red.
M: Probably intended as the same, since second band has closer hatchuring than the red centre.

(lvi) Octaviani. Legio Palatina. Presumably formed from one of the old legiones formerly bearing the number VIII.
O: White ground and centre, red "mushrooms" and border and divider of centre.
M: Same.

(lvii) Thebaei. Legio Palatina.
O: From outside inwards on left, maroon, yellow, maroon. On right, yellow, maroon, yellow.
M: Same, except maroon shown as red.

(lviii) Cimbriani. Legio Palatina.
O: From the outside inwards, yellow, maroon, yellow.
M: Same, except maroon shown as red.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(lix) Armigeri Propugnatores Iuniores.
O: Larger "fan blades" pale blue, smaller white, then continuing towards centre with red, white, light green.
M: Same, except blue apparently darker and yellow substituted for green.

(lx) Cornuti Seniores. Auxilium Palatinum.
O: Red figure on white ground.
M: Same.

(lxi) Brachiati Seniores. Auxilium Palatinum.
O: Red rim, yellow figure on pale blue ground.
M: Same.

(lxii) Petulantes Seniores. Auxilium Palatinum.
O: Blue figure on yellow ground.
M: Same.

(lxiii) Celtae Seniores. Auxilium Palatinum.
O: Yellow figure on red ground.
M: Same.

(lxiv) Heruli Seniores. Auxilium Palatinum.
O: From the outside inwards, red, white, red, white.
M: Same.

(lxv) Batavi Seniores. Auxilium Palatinum.
O: From the outside inwards, red, mid-blue, dark green.
M: Same, except yellow instead of green.

(lxvi) Mattiaci Seniores. Auxilium Palatinum.
O: Red rim, white ground, crossed by yellow chain on black.
M: Same, except chain colour not specified.

(lxvii) Ascarii Seniores. Auxilium Palatinum.
O: Same as (lxvi). One must be wrong. Probably the former, since a different shield is included for Mattiaci Seniores in the eastern section.
M: Same.

(lxviii) Ascarii Iuniores. Auxilium Palatinum.
O: Light blue ground, light green centre, red fox.
M: Same, except centre shown as yellow, and fox looks more like a misshapen cat.

(lxix) Iovii Seniores. Auxilium Palatinum.
O: Light blue ground, with light green centre.
M: Blue ground with yellow centre.

(lxx) Cornuti Iuniores. Auxilium Palatinum.
O: From outside inwards, red, yellow, red, white, brown figure.
M: From outside inwards, red, yellow, deeper red, white, yellow figure.

(lxxi) Sagittarii Nervii. Auxilium Palatinum. Archers.
O: From outside inwards, red, dark green, yellow, red.
M: Dark red, yellow, deeper yellow, red.

(lxxii) Leones Seniores. Auxilium Palatinum.
O: From outside inwards, red, dark green, red, dark green.
M: Same, except green shown as yellow.

(lxxiii) Leones Iuniores. Auxilium Palatinum.
O: Light blue ground, red rim, keyhole and centre, head natural with blonde hair.
M: Same.

(lxxiv) Tubantes. Auxilium Palatinum.
O: Light blue ground, red rim and keyhole, maroon centre, head natural with blonde hair.
M: White ground and centre spot, red rim and keyhole, head natural.

(lxxv) Salii. Auxilium Palatinum.
O: From outside inwards, red, light blue, yellow, light blue, light blue.
M: Same, except centre spot white.

(lxxvi) Grati. Auxilium Palatinum.
O: Light blue ground, dark green rim, red dogs.
M: Same, except rim shown as yellow.

(lxxvii) Felices Seniores. Auxilium Palatinum.
O: Dark green ground, red rim, brown dog.
M: Yellow ground and dog, red rim.

(lxxviii) Felices Iuniores. Auxilium Palatinum.
O: Light blue ground, red rim, head natural with black hair, stake black and white.
M: Blue ground, red rim, head shown as yellow, hair unspecified, stake black and white.

(lxxix) Gratianenses Seniores. Auxilium Palatinum.
O: Ground and lower shape white, rim red, head natural with black hair.
M: Same except lower shape more rounded and face yellow; may represent the sun rising from behind the brow of a hill.

(lxxx) Invicti Seniores "Undefeated". Auxilium Palatinum.
O: From outside inwards, red, yellow, red, stake white, head natural with black hair.
M: From outside inwards, red, white, red, stake white, face yellow, hair possibly white.

(lxxxi) Augustei. Auxilium Palatinum.
O: From outside inwards, red, white, brown.
M: From outside inwards, red, white, red.

(lxxxii) Iovii Iuniores. Auxilium Palatinum.
O: Ground mid-blue, rim and animal red.
M: Same, except animal white or natural, further towards centre, has big tail and looks like a leaping squirrel.

(lxxxiii) Victores Iuniores. Auxilium Palatinum.
O: Ground dark green, rim and stake red, head natural with black hair.
M: Ground yellow, rim red, stake white, head natural.

(lxxxiv) Batavi Iuniores. Auxilium Palatinum.
O: Ground red, lower part of figure black and white, upper part pale blue.
M: Same.

(lxxxv) Bructeri. Auxilium Palatinum.
O: From the outside inwards, red, yellow, pale blue, red, yellow, orange figure.
M: From the outside inwards, red, white, red, yellow, figure unspecified or white.

(lxxxvi) Ampsiuarii. Auxilium Palatinum.
O: Ground and border around keyhole white, rim, keyhole and centre spot red.
M: Same.

(lxxxvii) Gratianenses Iuniores. Auxilium Palatinum.
O: Ground light blue, rim and stake red, head natural with grey hair.
M: Ground blue, rim red, stake and face yellow.

(lxxxviii) Valentinianenses Iuniores. Auxilium Palatinum.
O: Ground red, rim light blue, stake white, head natural with grey hair.
M: Same, except head colours not specified.

Also
Raeti. Auxilium Palatinum.
O: Ground light blue, rim and stake red, head natural with black hair.
M: Same, except head shown as yellow.

(lxxxix) Sequani. Auxilium Palatinum.
O: From outside inwards, dark green, light brown (or gold?) white.
M: From the outside inwards, yellow, red, white.

(xc) Sagittarii Venatores "Huntsmen". Auxilium Palatinum. Archers.
O: Ground yellow, bird light brown.
M: Ground yellow, bird colour unspecified or white.

(xci) Latini. Auxilium Palatinum.
O: Ground yellow, bird light brown.
M: Ground yellow, bird unspecified or white.

(xcii) Sabini. Auxilium Palatinum.
O: From outside inwards, yellow, dark green, red, yellow, maroon.
M: From outside inwards, yellow, darker yellow, red, yellow, darker red.

(xciii) Honoriani Atecotti Seniores. Auxilium Palatinum. The Atecotti were a savage tribe of pirates from outside the empire, probably Scots from Ireland. The unit may originally have been formed from prisoners.
O: From outside inwards, red, mid blue, white.
M: From outside inwards, red, darker red, white.

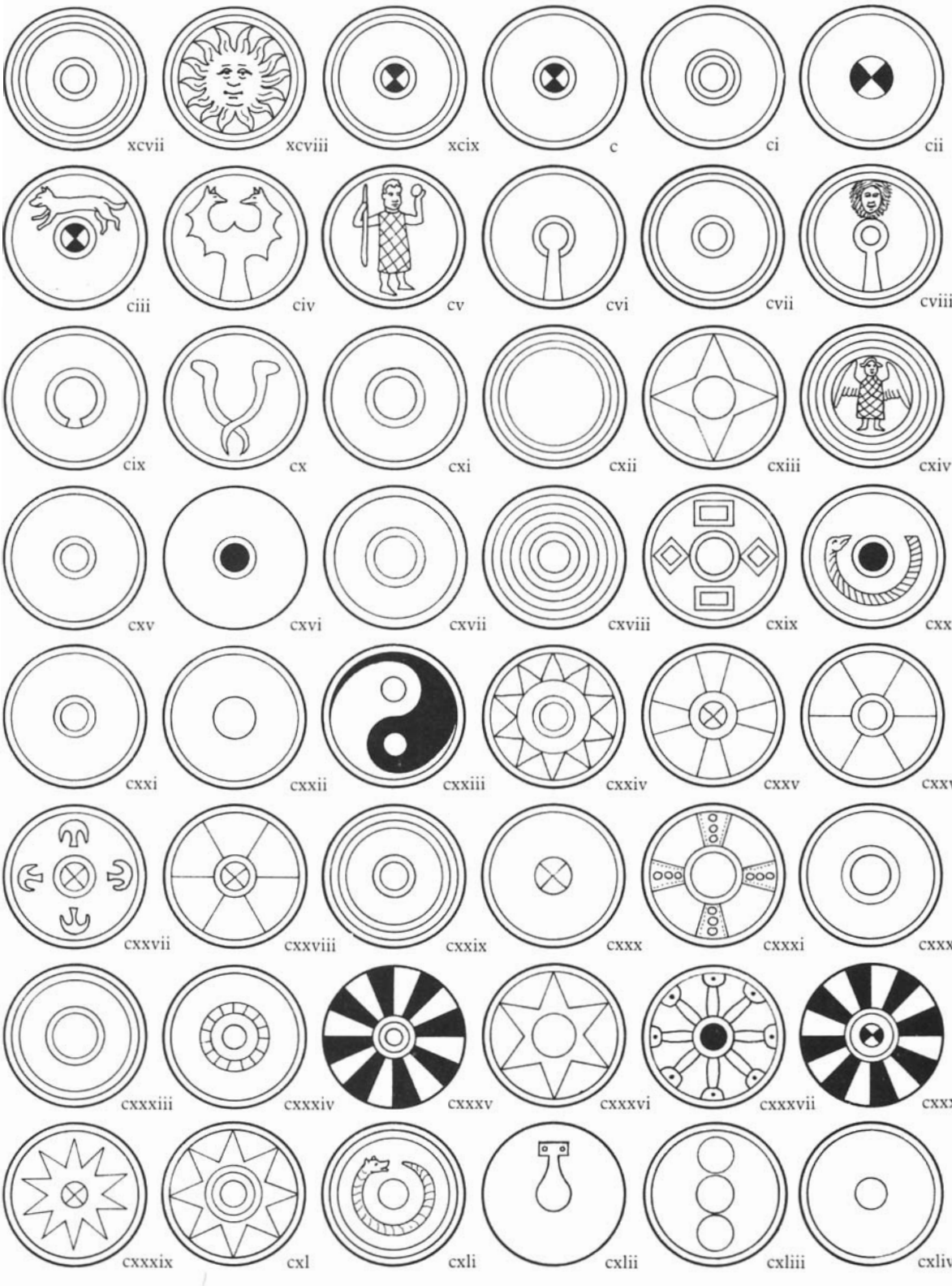
(xciv) Honoriani Marcomanni Seniores. Auxilium Palatinum.
O: White ground, yellow rim, lower part of figure red, upper part black.
M: Same, except upper part of figures shown a darker yellow than rim.

(xcv) Honoriani Marcomanni Iuniores. Auxilium Palatinum.
O: Red ground, white figure.
M: Same.

(xcvi) Honoriani Atecotti Iuniores. Auxilium Palatinum. See remarks for (xciii).
O: Mid blue ground, red rim, yellow figure, red heater shape.
M: Red rim, darker red ground, yellow figure, red centre spot replacing heater.

(xcvii) Brisigavi Seniores. Auxilium Palatinum.
O: From the outside inwards, red, dark green, yellow, white, mid blue, white.
M: From the outside inwards, red, white, yellow, white, white, white.

(xcviii) Brisigavi Iuniores. Auxilium Palatinum.
O: From the outside inwards, mid blue, yellow, orange, orange.
M: From the outside inwards, dark red, yellow, red, red.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(xcix) Honoriani Mauri Seniores. Auxilium Palatinum.
O: From the outside inwards, white, yellow, red, mid blue, quartered blue and white.
M: From the outside inwards, white, yellow, red, darker red, quartered darker red and white.

(c) Honoriani Mauri Iuniores. Auxilium Palatinum.
O: From the outside inwards, red, white, mid blue, quartered blue and white.
M: From the outside inwards, red, white, darker red, quartered darker red and white.

(ci) Celtae Iuniores. Auxilium Palatinum.
O: From the outside inwards, red, white, mid blue, red, white.
M: From the outside inwards, red, white, darker red, red, white.

(cii) Invicti Iuniores Britanniciani "Undefeated British". Auxilium Palatinum.
O: From the outside in, white, dark green, quartered red and white.
M: From the outside in, red, yellow, quartered red and white.

(ciii) Batavi Iuniores. Auxilium Palatinum. Something of a mystery, as we already have a Batavi Iuniores as (lxxxiv). Possibly the full title should be Batavi Iuniores Britanniciani, by parallel with its neighbours.
O: Dark green ground, white rim, red animal, mid blue border around mid blue and white quartered.
M: Yellow ground, red rim, white or natural animal, red border around red and white quartered.

(civ) Exculcatores Iuniores Britanniciani "Squashers from Britain". Auxilium Palatinum. Exculcatores appear in Vegetius as an infantry type well suited to pursuing fleeing enemy.
O: From outside inwards, red, white, yellow figure.
M: From inside outwards, red, darker red, yellow figure.

(cv) Felices Valentinianenses. Auxilium Palatinum.
O: Yellow ground, red rim, figure light brown (or gold?).
M: White ground, red rim, figure natural. Figure portrayed is conventional Jupiter brandishing thunderbolt and wearing muscle cuirasse and crown.

(cvi) Mattiaci Iuniores Gallicani. Auxilium Palatinum.
O: Red ground, rim and keyhole mid blue, ring round keyhole white.
M: Red ground, rim and keyhole darker red, white centre spot.

(cvii) Salii Iuniores Gallicani. Auxilium Palatinum.
O: From outside inwards, red, mid blue, white, red, mid blue.
M: From outside inwards, red, darker red, white, red, darker red.

(cviii) Sagittarii Nervii Gallicani. Auxilium Palatinum. Archers.
O: Red rim, yellow inner ring, white ground, red keyhole and centre, head natural with black hair.
M: Same, except centre spot white, head either blonde or wearing Persian three lappet headdress.

(cix) Iovii Iuniores Gallicani. Auxilium Palatinum.
O: From outside inwards, red, mid blue, yellow, red.
M: From outside inwards, darker red, red, yellow, darker red.

(cx) Seguntienses. Auxilium Palatinum. Probably the former garrison of Segontium on the north Welsh coast, promoted to the field army, and now in Illyricum.
O: Mid blue ground with red rim and figures.
M: Red ground, with darker red rim and figures.

(cxi) Galli Victores. Auxilium Palatinum.
O: From outside inwards, red, dark green, yellow, dark green.
M: From outside inwards, red, yellow, yellow, white.

(cxii) Honoriani Victores Iuniores. Auxilium Palatinum.
O: From outside inwards, red, yellow, mid blue, yellow.
M: Same, except darker red substituted for mid blue.

(cxiii) Honoriani Ascarii Seniores. Auxilium Palatinum.
O: From outside inwards, red, yellow, maroon, red.
M: From outside inwards, dark red, yellow, red, dark red.

(cxiv) Felices Iuniores Gallicani. Auxilium Palatinum.
O: From outside inwards, red, yellow, mid blue, red, yellow, red figure.
M: From outside inwards, red, yellow, dark red, red, yellow, conventional angel in white.

(cxv) Atecotti Iuniores Gallicani. Auxilium Palatinum.
O: From outside inwards, red, mid blue, white, red.
M: From outside inwards, red, darker red, white, white.

(cxvi) Tungri. Auxilium Palatinum.
O: From outside inwards, red, yellow, black.
M: From outside inwards, red, white, darker red.

(cxvii) Mattiarii Honoriani Gallicani. Auxilium Palatinum.
O: From outside inwards, red, white, red, mid blue.
M: From outside inwards, red, white, red, darker red.

(cxviii) Mauri Tonantes Seniores. Auxilium Palatinum.
O: From outside inwards, red, yellow, mid blue, yellow, red, yellow, mid blue.
M: Same, except darker red substituted for blue.

(cxix) Mauri Tonantes Iuniores. Auxilium Palatinum.
O: Blue ground and centre disk, red rim and boxes, white box interiors, yellow ring around centre disk.
M: Red rim, and boxes, darker red ground and box interiors, yellow ring around white centre disk, dark red centre spot added.

(cxx) Menapii Seniores. Legio Comitatensis.
O: Dark green ground, red rim, yellow monster, yellow border around dark green centre disk.
M: Yellow ground, monster, border and centre disk, red rim.

(cxxi) Fortenses. Legio Comitatensis.
O: From outside inwards, red, mid blue, white, mid blue.
M: From outside inwards, dark red, red, white, red.

(cxxii) Propugnatores Seniores "Defenders". Legio Comitatensis.
O: From outside inwards, red, dark green, yellow.
M: From outside inwards, dark red, yellow, yellow.

(cxxiii) Armigeri Defensores Seniores. Legio Comitatensis.
O: Rim and two disks red, left shape yellow, right mid blue.
M: Same, except right shape darker red.

(cxxiv) Septimani Seniores. Legio Comitatensis. Presumably formed from one of the old seventh legiones.
O: Red rim, maroon ground, star and all in it yellow.
M: Red rim, darker red ground, yellow star.

(cxxv) Regii. Legio Comitatensis.
O: Red rim, smaller "fan blades" mid blue, others white, centre disk red, centre spot quartered white and red.
M: Same, except smaller fan blades darker red, centre spot quartered black and white.

(cxxvi) Pacatianenses "Pacifiers". Legio Comitatensis.
O: Rim, top and other alternate "fanblades" red, other fan blades and centre disk mid blue, border to centre disk white.
M: Same, except darker red substituted for blue.

(cxxvii) Vesontes. Legio Comitatensis.
O: Ground white, rim, mushrooms and centre disk red, centre spot quartered blue and white.
M: Same, except centre spot colours not indicated.

(cxxviii) Mattiarii Iuniores. Legio Comitatensis.
O: Rim red, top and alternate "fan blades" yellow, other fan blades mid blue, centre disk red, centre spot quartered white and blue.
M: Not included.

(cxxix) Mauri Cetrati. Legio Comitatensis.
O: From outside inwards, red, dark green, yellow, maroon, yellow, mid blue.
M: From outside inwards, red, white, yellow, white, red, darker red, white.

(cxxx) Undecimani. Legio Comitatensis. One of the old eleventh legiones.
O: From the outside inwards, red, mid blue, white.
M: From the outside inwards, darker red, red, white.
Both show the white centre spot divided but uncoloured.

(cxxxi) Secundani Italiciani. Legio Comitatensis. Former border legio.
O: Ground, cross and centre disk white, rim, border to centre disk and beads on cross red.
M: Same, except edges of cross possibly also red.

(cxxxii) Germaniciani Iuniores. Legio Comitatensis.
O: From the outside inwards, red, dark green, yellow, white.
M: From the outside inwards, red, yellow, yellow, yellow.

(cxxxiii) Tertia Italica. Legio Comitatensis. Former border legio.
O: From outside inwards, red, dark green, red, yellow, dark green.
M: From the outside inwards, dark red, yellow, red, yellow, yellow.

(cxxxiv) Tertia Herculea. Legio Comitatensis. Former border legio.
O: From outside inwards, red, yellow, ring divided into mid blue, red and yellow sections, apparently randomly, yellow, red.
M: From outside inwards, red, yellow, ring divided randomly into black, red and white sections, white, white.

(cxxxv) Lanciarii Gallicani Honoriani. Legio Comitatensis.
O: From outside inwards, alternate dark green and white, yellow, red, yellow.
M: Same pattern, but whole shield yellow.

(cxxxvi) Propugnatores Iuniores. Legio Comitatensis.
O: From outside inwards, red, mid blue, red, dark green.
M: From outside inwards, dark red, red, dark red, red.

(cxxxvii) Secunda Britannica, also known as Secundani Iuniores. Legio Comitatenses. Formed from the old Legio II Augusta.
O: Yellow ground, red rim, spokes and centre disk, black centre spot and dots.
M: Same, except white centre spot.

(cxxxviii) Septimani Iuniores. Legio Comitatensis. One of the old seventh legiones.
O: From outside inwards, alternate red and white, white, white, quartered black and white.
M: Same, except whole surrounded by white rim.

(cxxxix) Praesidienses. Legio Comitatensis. Praesidium is a fortress controlled by the Dux Britanniarum, tentatively identified by Frere as Newton Kyme. However, since the same list refers to Eburacum as Sextae, it is possible that Deva also changed its name, making this unit a possible Legio XX Valeria Victrix.
O: From outside inwards, mid blue, red, mid blue, white.
M: From outside inwards, dark red, red, dark red, white with no division.

(cxl) Ursarienses "Bears". Legio Comitatensis.
O: From outside inwards, yellow, red, mid blue, yellow, red, white.
M: From outside inwards, yellow, dark red, red, white, white, white.

(cxli) Cortoriacenses. Legio Comitatensis.
O: From outside inwards, yellow, dark green, red, with white monster and centre.
M: Same, except green shown as yellow.

(cxlii) Geminiacenses. Legio Comitatensis. One of the old legiones bearing the title Gemina.
O: Red ground, yellow figure.
M: Same.

(cxliii) Honoriani Felices Gallicani. Legio Comitatensis.
O: Dark green ground and centre disk, red rim, white outer disks.
M: Same, except green shown as yellow.

(cxliv) Tertia Iulia Alpina. Legio Comitatensis. Former border legio.
O: From outside inwards, red, mid blue, white.
M: From outside inwards, dark red, red, white.

(cxlv) Prima Flavia Pacis, also referred to as Primani. Legio Comitatensis. Former border legio.
O: Red rim and ground, mid blue wheel, spokes and hub.
M: Same, except blue shown as darker red.

(cxlvi) Secunda Flavia Virtutis. Legio Comitatensis. Former border legio.
O: From outside inwards, red, yellow, white, yellow, red, white.
M: Same.

(cxlvii) Tertia Flavia Salutis. Legio Comitatensis. Former border legio.
O: From outside inwards, red, yellow, mid blue divided by yellow spokes, yellow, yellow, red, blue.
M: From outside inwards, dark red, yellow, red divided by yellow spokes, yellow, white, red, white.

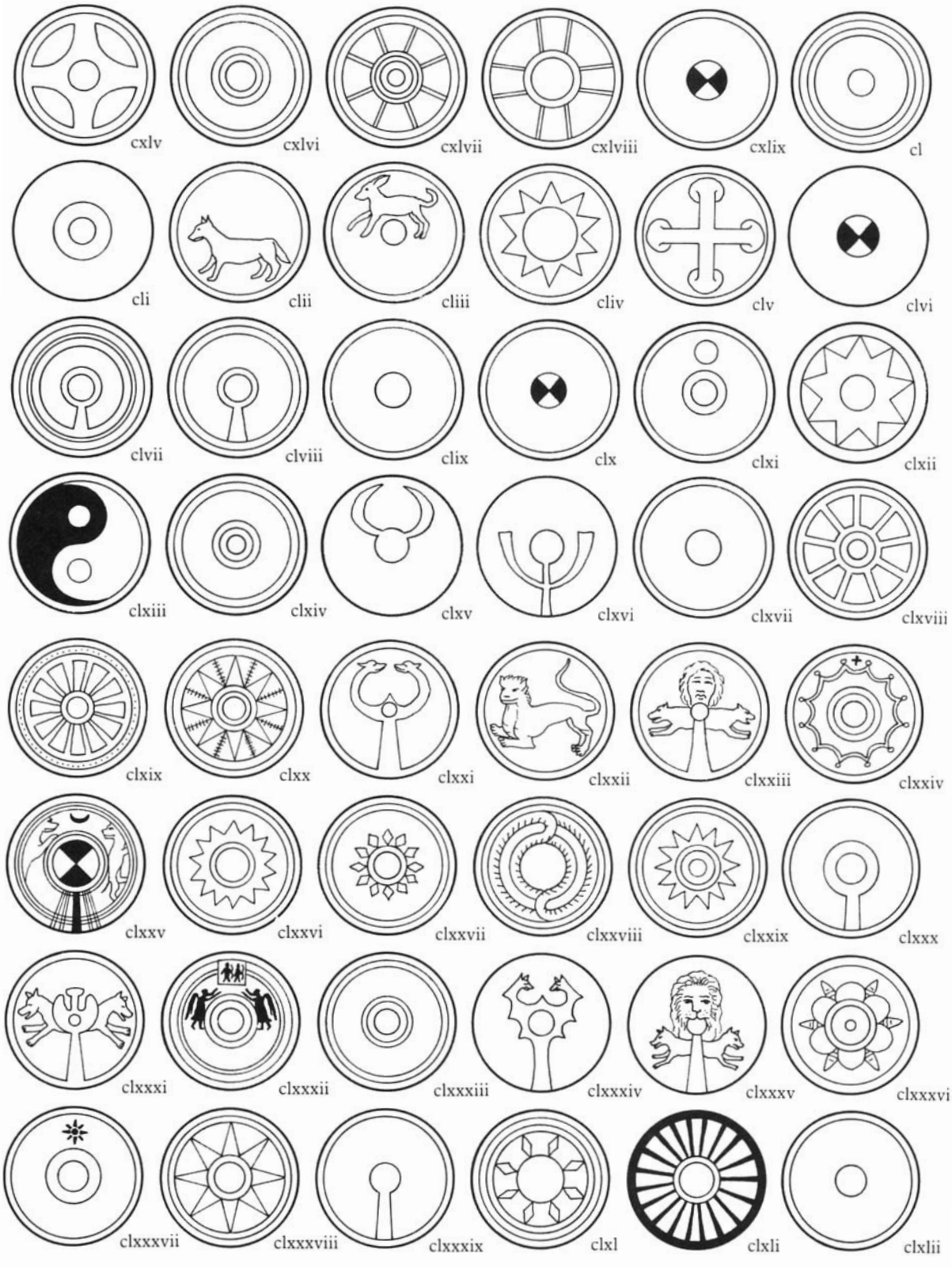
(cxlviii) Flavia Victrix Constantina. Legio Comitatensis.
O: Red ground and centre, light blue cross, yellow rim, border to cross and border to centre.
M: Red ground and centre, yellow rim, border to centre and eight yellow spokes substituted for cross.

(cxlix) Secunda Flavia Constantiniana. Legio Comitatensis. Former border legio.
O: From outside inwards, red, mid blue, quartered blue and black.
M: From outside inwards, dark red, red, quartered black and white.

(cl) Tertio Augustani. Legio Comitatensis. Former border legio.
O: From outside inwards, white, red, yellow, red, yellow.
M: Same.

(cli) Fortenses. Legio Comitatensis.
O: From outside inwards, yellow, dark green, white.
M: Same, except green shown as yellow.

(clii) Legio Prima Alpina. Pseudocomitatensis. Former border legio.
O: Dark green ground, white rim, blue-gray animal.
M: Yellow ground, white rim, animal is white unicorn sitting.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(cliii) Legio Prima Flavia Gallicana Constantia. Pseudocomitatensis. Former border legio.
O: Light blue ground, dark green centre, red rim and animal.
M: Red ground, yellow centre, dark red rim, animal white or natural.

(cliv) Lanciarii Lauriacenses. Pseudocomitatensis.
O: From outside inwards, white, red, yellow, yellow.
M: Same.

(clv) Lanciarii Comaginenses. Pseudocomitatensis.
O: Light blue ground, red rim, dark green figure.
M: Red ground, dark red rim, yellow figure.

(clvi) Taurunenses. Pseudocomitatensis.
O: Red ground, centre quartered dark green and white.
M: Red ground, darker red rim, centre divided but left white.
Also
Superventores "Surprisers". Pseudocomitatensis.
O: Red ground, centre quartered yellow and white.
M: Red ground, centre quartered yellow and yellow.

(clvii) Antianenses. Pseudocomitatensis.
O: From outside inwards, white, red, yellow, red, light blue, red, light blue.
M: From outside inwards, white, dark red, yellow, dark red, red, dark red, white.

(clviii) Pontinenses. Pseudocomitatensis.
O: From outside inwards, dark green, yellow, dark green, white keyhole, black.
M: From outside inwards, yellow, yellow, yellow, white keyhole and centre spot.

(clix) Legio Secunda Iulia Alpini. Pseudocomitatensis. Former border legio.
O: From outside inwards, white, dark green, light blue. Light blue centre has irregular shaped white patch which may or may not have been intended as a white centre spot.
M: From outside inwards, white, yellow, dark red, white.

(clx) Martenses. Pseudocomitatensis.
O: From outside inwards, red, light blue, quartered dark green and white.
M: Dark red, red, yellow.

(clxi) Abrincateni. Pseudocomitatensis.
O: White ground, red rim, centre spot and upper spot, light blue around centre spot.
M: Yellow ground, dark red rim, upper spot and surround to centre spot, red centre spot.

(clxii) Defensores Seniores. Pseudocomitatensis.
O: White ground and rim, light blue star, yellow centre.
M: Same, except star shown as red.

(clxiii) Mauri Osismiaci. Pseudocomitatensis.
O: Rim light blue, left hand shape dark green, right hand yellow, disks same colour as areas they rest on.
M: Same markings, but rim red, all within it yellow.

(clxiv) Legio Prima Flavia Metis. Pseudocomitatensis. Former border legio.
O: From outside inwards, light blue, yellow, red, yellow, white, red.
M: From outside inwards, red, yellow, darker red, yellow, white, white.

(clxv) Constantiniani. Pseudocomitatensis.
O: Red ground, yellow figure.
M: Same.

(clxvi) Corniacenses. Pseudocomitatensis.
O: Red ground, white figure.
M: Same.

(clxvii) Septimani Iuniores. Pseudocomitatensis.
O: From outside inwards, red, dark green, red.
M: Same, except green shown as yellow.

(clxviii) Romanenses. Pseudocomitatensis.
O: Red ring, ground and centre spot, white border around centre spot, light blue rings inside rim and around white connected by spokes of same colour.
M: Same, except blue shown as red and red as darker red.

The next batch of shields are selected infantry units of the Eastern Empire. Some are chosen because of their seniority or fame, others because associated with nations or troop types not included in the western lists.

(clxix) Lanciarii Seniores. Legio Palatina. Senior legio of the whole army.
O: Yellow ground and centre disk, light blue rim, red "fan blades" and centre spot.
M: Same, except outer half of rim darker, and black substituted for red.

(clxx) Nervii. Legio Palatina.
O: From outside inwards, pale blue, yellow, pale blue, mid blue, yellow, red, yellow.
M: From outside inwards, blue, yellow, blue, black, yellow, black, yellow.

(clxxi) Anglevari. Auxilium Palatinum.
O: Light blue ground, red rim, figure and centre spot.
M: Same, except darker red substituted for blue.

(clxxii) Hiberi. Auxilium Palatinum.
O: Light blue ground, red rim, yellow lion.
M: Same, except darker red substituted for blue.

(clxxiii) Visi. Auxilium Palatinum. Visigoths.
O: Yellow ground, head and centre spot, red rim and stake, light brown animals.
M: Same, except animals also yellow.

(clxxiv) Victores. Auxilium Palatinum.
O: From outside inwards, pale blue, white, red, mid blue, yellow, mid blue, yellow.
M: From outside inwards, red, white, red, white, yellow, white, white.

(clxxv) Matiarii Seniores. Legio Palatina.
O: Yellow, except for mid blue and white quartered centre disk with white surround, maroon crescent and maroon vertical under centre.
M: Same pattern, but no colour specified, except red crescent, blue centre disk crossed by yellow diagonals, wide black drapes instead of narrow maroon vertical.

(clxxvi) Daci. Legio Palatina.
O: From outside inwards, mid blue, yellow, mid blue, pale blue, yellow, mid blue.
M: From outside inwards, black, yellow, black, blue, yellow, blue.

(clxxvii) Scythae. Legio Palatinum.
O: From inside outwards, pale blue, yellow, pale blue, white, yellow, red.
M: From outside inwards, black, yellow, blue, white, yellow, red.

(clxxviii) Primani. Legio Palatina.
O: Rim, centre and ropes red, rest yellow except part of ground appearing between ropes on right is mid blue.
M: Same, except black substituted for red and centre disk is yellow.

(clxxix) Regii. Auxilium Palatinum. Survived into Byzantine times, serving under Belisarius.
O: From outside inwards, mid blue, yellow, red, mid blue, yellow, pale blue, yellow.
M: Same, except mid blue shown as black.

(clxxx) Transtigritani. Pseudocomitatensis. Persian exiles.
O: White ground, yellow rim, mid blue key hole, yellow centre spot.
M: Same.

(clxxxi) Sagittarii Seniores Orientales. Auxilium Palatinum. Archers.
O: Pale blue ground, red rim and figure, light brown animals, yellow centre spot.
M: Same, except animals yellow.

(clxxxii) Sagittarii Iuniores Orientales. Auxilium Palatinum. Archers.
O: From outside inwards, red, white, white, purple with black figures, yellow, white, yellow. Smaller figures are black in white box.
M: From outside inwards, dark red, white, white, red with black figures, white, red, yellow. Smaller figures as O.

(clxxxiii) Bucinobantes. Auxilium Palatinum. Originally formed by Valentinian I from the followers of Fraomarius, King of the Bucinobantes, a German people allowed by him to settle in Britain.
O: From the outside inwards, red, light blue, red, yellow, mid blue, orange.
M: From the outside inwards, yellow, red, darker red, red, yellow, white.

(clxxxiv) Falchovarii. Auxilium Palatinum. Falx wielders?
O: Mid blue ground, pale blue figure, yellow centre.
M: Same.

(clxxxv) Tervingi. Auxilium Palatinum. Ostrogoths.
O: Mid blue ground, yellow head and centre spot, red stake, light brown animals.
M: Same, except animals omitted.

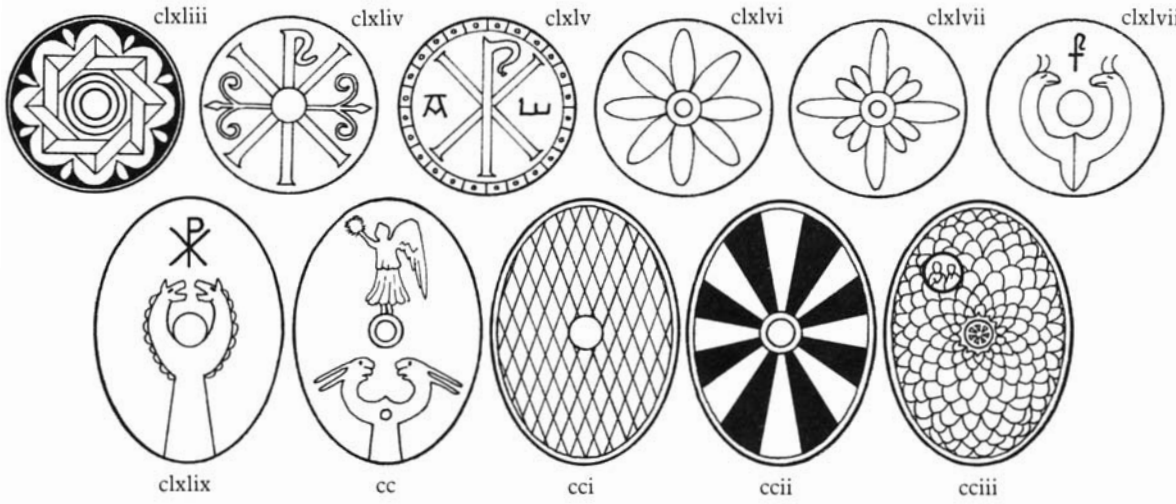
(clxxxvi) Quinta Macedonica. Legio Comitatensis. One of the old border legiones that lasted well into Byzantine times, ending as the garrison of Elephantine in Egypt.
O: From the outside inwards, red, white, maroon, yellow, mid blue, black.
M: From the outside inwards, red, white, red, yellow, blue.

(clxxxvii) Balistarii Seniores. Legio Comitatensis. Artillery.
O: From the outside inwards, red, white with red star, mid blue, yellow.
M: From the outside inwards, white, yellow with black star, blue, yellow.

(clxxxviii) Funditores. Pseudocomitatensis. Slingers.
O: From the outside inwards, white, yellow, white, red, yellow, yellow.
M: From the outside inwards, red, white, white, red, yellow, darker yellow.

(clxxxix) Prima Isaura Sagittaria. Pseudocomitatensis. Archers. A number of units of Isaurian archers fought under Belisarius. This could have been one of them.
O: Mid blue field, red rim, yellow key hole.
M: Same.

(clxl) Balistarii Iuniores. Legio Comitatensis. Artillery.
O: From the outside inwards, mid blue, yellow, dark green, white with arrow heads coloured alternatively red and blue, yellow.
M: Same, except that yellow substituted for green.



(clxli) Britones Seniores. Legio Palatina. One of the three former legiones of Britain, now in Illyricum. Probably Legio XX Valeria Victrix, removed by Stilicho for his Gothic campaigns in that area. However, see (cxxxix) Praesidienses.

O: Mid blue centre with yellow surround, light green "fan blades", ground red.

M: Same, except centre and fan blades white.

(clxlii) Germaniciani Seniores. Legio Comitatensis.

O: From outside inwards, red, yellow, red.

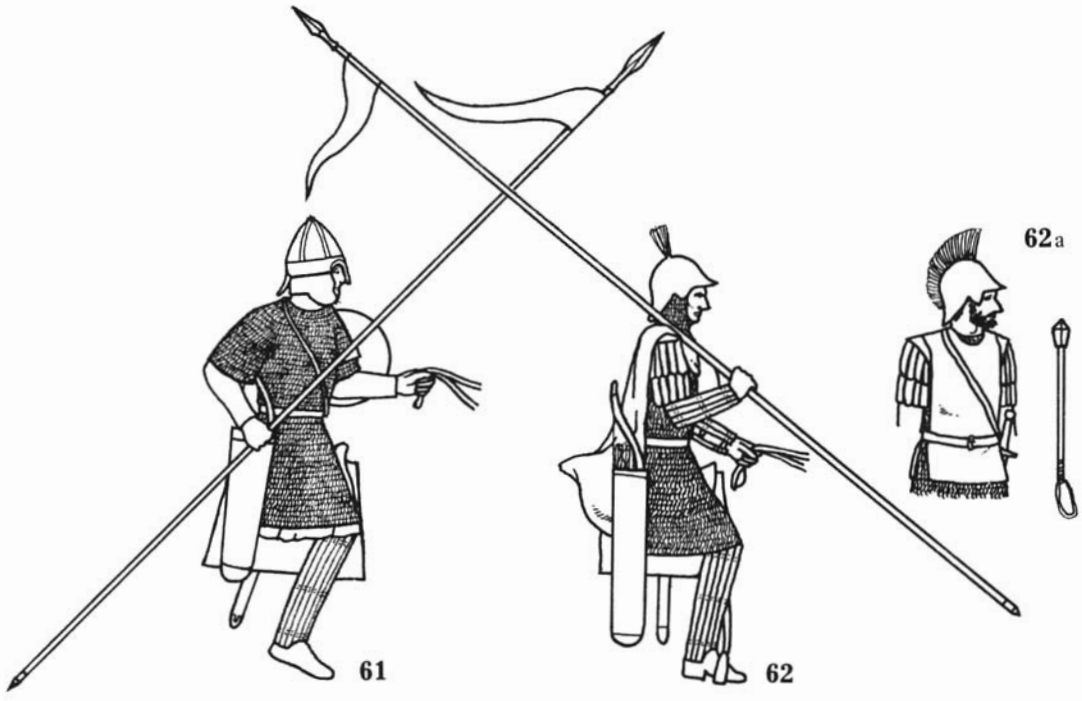
M: Same, except rim shown a darker red.

The remaining shields are from other sources, mainly monumental. They cover guard units not found in the Notitia, confirm some of the typical patterns, and show how the pattern was adapted to the more usual oval shield shape. Only the first provides any evidence for colour.

(clxliii) is from the Late Roman fort at Luxor in Egypt. It is one of a series of circular and oval designs placed along the walls below the paintings of men and horses. They need not of course necessarily be shield designs, but each only appears once, they are the right shape, and three of them have very similar designs to (clxlvi) and (clxlvii). That shown is one of the most complicated. Colours include dark purple, a light blue tending to violet, dark and light greens, yellow, and a light reddish brown.

(clxliv) and (clxlv) are obviously versions of the shield carried by 58, all carried by very similarly dressed guardsmen, except than an oval version of (clxiv) is also shown on a surviving stone of the Column of Theodosius I carried by a man dressed as 9a. This probably depicts a foot guardsman's battle dress, the others being in ceremonial dress. (clxlv) appears on a silver gilt dish of Constantius II and also on sketches of the now destroyed Column of Arcadius. The design thus spans the Notitia, yet is not shown in it. Being always shown carried by men in close attendance on the emperor, it obviously belongs to an inner guard unit, possibly the Candidati. An alternative design, not illustrated, for the Candidati shield is found in two separate late Byzantine manuscript illustrations depicting the courts of Constantine I and Julian. Guardsmen in these have a plain red oval shield surrounded by a light blue rim with gold arabesque decorations. As Julian would not have used the Christian Chi-Rho symbol on his shields, he may have temporarily reverted to an earlier version dating before Constantine's conversion.

(clxlvi) and (clxlvii) appear with (clxlv) on a sketch of the now destroyed Column of Arcadius. A scene from the base depicts Arcadius and his brother Honorius meeting at the head of their troops. The first soldier following each co-emperor carries (clxlv), the second and third carry (clxlvi), the fourth and last (clxlvii).



(clxlviii), (clxlix) and (cc) all show variations on the Notitia designs for the senior auxilia palatina raised by Constantine. The first is from a rather crude statuette of an early Constantinian emperor and appears on the sides of his throne. The second is from the Arch of Constantine and shows how Constantine's troops inscribed the Chi-Rho on their shields as a result of his vision. The design is very close indeed to that of the Celtae in the Notitia. The third is an earlier stage in development, with the typical later design at the bottom and a winged victory occupying the place of honour above.

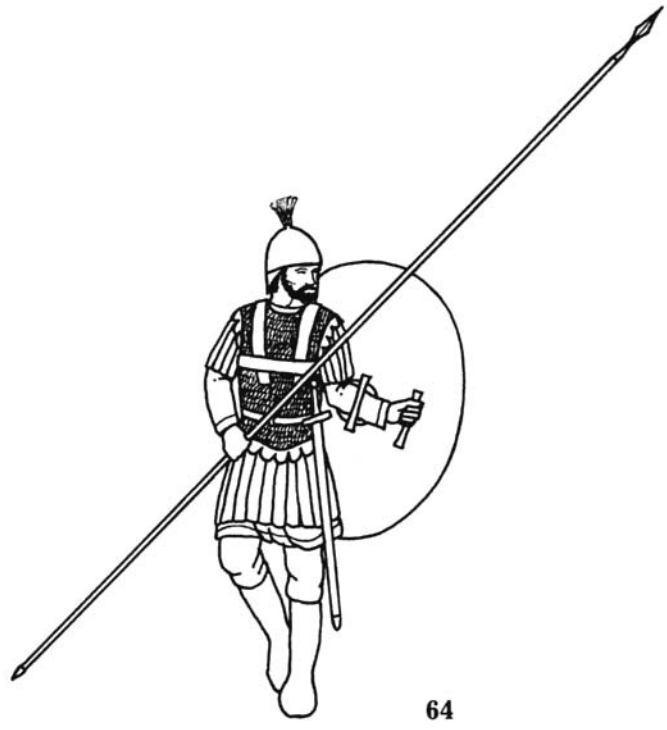
(cci), (ccii) and (cciii) all appear on carved ivories of the late 4th and early 5th centuries. The first two are carried by guardsmen in the usual ceremonial uniform, the third by Stilicho, Magister Militum (Master of the Soldiers) and guardian of the two young co-emperors whose portraits appear on it. The design appears to be intended as overlapping feathers and the boss has a fluted spike. A very similar shield is depicted on a funeral monument of about 130 A.D. in the Vatican, carried by an unarmoured guardsman armed with a lead-weighted pilum.

61. BELISARIAN BYZANTINE HEAVY CAVALRYMAN

This figure is a conjectural reconstruction of the type of cavalryman that became dominant with the ending of the western Roman empire. After the Hunnic wars and the break-up of the Hunnic empire at the death of Attila, many Huns were taken into Roman service, both as individuals and in groups. This lead to a rapid spread of mounted archery outside the units formerly specialising in it. Aetius, now virtually ruler of the western empire may have been the instigator of the changes, but in the event they reached their full fruition only in the east. By the time of Belisarius' expeditions to reconquer the west, most of the cavalry combined the use of Kontos and bow.

The mail shirt, Kontos, small round shield, leg protection and bow are taken from the description by Procopius in his contemporary history of the wars. The helmet is based on actual examples from Egypt, and the splinted leg protection is similar to that of the Avars. An incident during the siege of Rome when Belasarius was recognised by the colour of his horse's face (Kill the man on the white-faced bay!) shows that horse armour was not yet normal.

63



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62. HERACLIAN BYZANTINE HEAVY CAVALRYMAN

Cavalry development continued after Belisarius' campaigns, reaching its peak under the Emperor Heraclius, the last ruler to have the whole of the eastern Roman empire at his disposal and to have a fully regular army. The figure illustrated is based on descriptions in the tactical manual written by Heraclius' predecessor Mauricius. There are no contemporary representations in art, but items such as the distinctive helmet are taken from slightly later pictorial sources.

He wears an iron helmet and mail shirt, supplemented in the case of front rank men by iron splint protection for the fore arms and lower legs and a mail hood hooked up to his helmet. Other ranks might also have these if sufficient quantities were available, which they often were not. All ranks were armed with Kontos, now renamed Kontarion, bow and sword. These were often supplemented by lead-weighted throwing darts called "Marzobaboula", a corruption of the earlier Martiobarbuli, carried in a leather case on the front of the saddle. A small round shield was strapped to the upper left arm so as not to hinder archery. Although all ranks carried both Kontarion and bow, the 1st, 2nd and 5th ranks were primarily trained as lancers, the 3rd and 4th primarily as archers.

62a shows the larger crest identifying an officer and the Bardoukion or mace that was the officer's additional side arm. It also shows the open sided surcoat sometimes worn.

Clothing was of linen in summer, dyed goatskin in winter. Gauntlets and boots were of yellowish leather. Red and blue were popular clothing colours, but at this time the cloak was usually of yellow-brown to aid in concealment. Helmet crests, pennons, and surcoats were dyed a regimental colour matching the primary colour of the shield and the standard, which for cavalry was a Bandon, the same as the earlier Roman vexillum. Bucellarii had similar tufts to helmet crests pointing up and out at the tips of their shoulders to indicate their former role as elite bodyguards.

Horse furniture included a well made saddle, which for the first time included stirrups, adopted from the Avars. Front rank and officers' horses had their head, neck and chest protected by iron or leather scale armour. Horses had tuft plumes in regimental colours at forehead, chin, and two each side of their rumps. Although

modern tests have shown the value of the stirrup has been exaggerated, it does aid stability in riding over rough ground or striking downwards with a sword.

Although the later development of Byzantine cavalry is out of place here and is covered by Ian Heath's companion book *Armies of the Dark Ages*, it can be quickly said that it was later found preferable to have mixed units of archers and lancers rather than have all men double armed. This made it possible to give the lancers a much larger kite-shaped shield. The surcoat developed into an extra quilted protection, and later into something very like the medieval "coat of plates".

63. BYZANTINE PSILOS

Lightly equipped archers of the kind illustrated formed the largest and most useful part of Belisarius' infantry, though they often suffered from their lack of spear protection against cavalry. They remained important later, sometimes in a mixed unit combined with armoured spearmen, but often still in specialised archer units. Their secondary weapon was a light axe, the Securis, used in conjunction with the small parrying shield normally hung at their belts. Archers might be given short mail corslets like that of 64 if a plentiful supply was available, but never a helmet.

Men from provinces where archery was not practised sometimes used javelins instead. They were considered especially useful in forested country. Other weapons used by Psiloi included crossbows, slings and staff slings. Slings, being no trouble to carry, were sometimes given to archers in case their bows become unserviceable, although it is very doubtful if many acquired the skill to use them effectively. The sling was also the weapon used by camp servants when these were rounded up and pushed into line. Staff slings required less skill and could deliver incendiary missiles, so may have been more generally useful.

64. BYZANTINE SKUTATOS

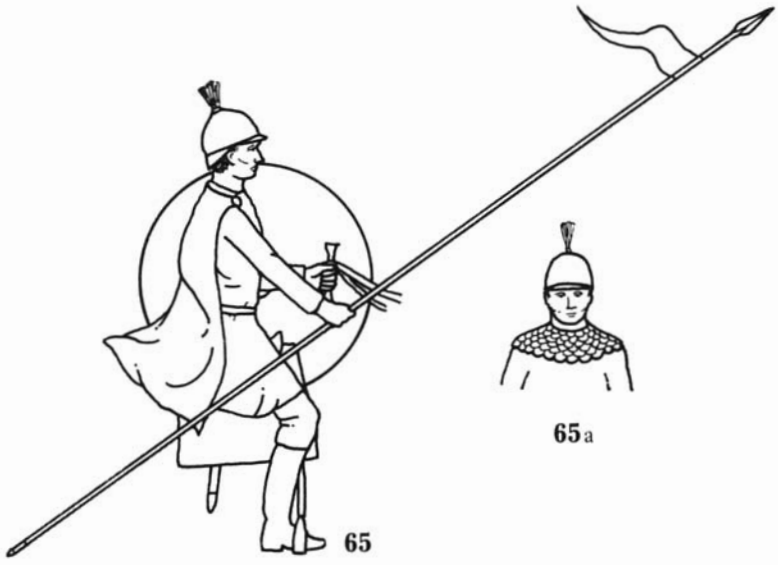
This man wears a short mail corslet over an undergarment with attached leather pteruges at shoulder and waist. Front rank men often added a mail hood and long wooden greaves protecting the shin and knee. The primary colour of the large oval shield was repeated by his helmet crest and the unit's Draco standard. There is no direct evidence for shield patterns at this time, but a number of units surviving into this period are included earlier as 60 (clxxvi), (clxxvii), (clxxix) and (clxxxix). There must be many other survivors that we do not know of.

The primary weapon is now a 12 feet long thrusting spear, identical to that of the cavalry and also known as a Kontarion. Such weapons were not used by the Byzantines' Roman predecessors, whose infantry had abandoned all weapons heavier than light javelins. The evidence suggests that infantry spearmen were introduced as the result of Narses' successful dismounting of heavy cavalry lancers at Taginae, and that any equivalent troops in Belisarius' army carried the usual later Roman Veruta and Martiobarbuli, weapons which Mauricius includes in his manual as alternatives to the Kontarion. The secondary weapon is usually a sword, sometimes a Securis.

65 & 66. BYZANTINE LIGHT CAVALRY

Belisarius relied for his light cavalry on Huns like 118 and Moors like 35. Mauricius barely mentions light cavalry, and it is not until the 10th century manuals that we find them covered in detail. However, when native Byzantine light cavalry do appear, they are so similar to later Roman types as to suggest that they were there all along. This is feasible, as Belisarius was given only left over troops for his expeditions, while Mauricius would naturally concentrate on new troop types rather than those whose tactics, equipment and drill were already well worked out.

Of the two types shown, 65 is a Trapezitos "trick rider". He carries Kontarion, two javelins and a sword, and relies for protection on a 3 feet diameter round shield. The most armour he can really hope for is the shoulder cape of mail or horn scales shown by 65a. 66 is a horse archer, and apart from his long boots, looks no different to later Roman horse archers.



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65a

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67. NORTH GAULISH CAVALRYMAN

The Gallic types illustrated here are all northern Gauls of the sort that fought both with and against Caesar. The southerners the Romans came in contact with earlier will be found in one of our other books, *Armies of the Macedonian and Punic Wars*.

This man is one of the lesser nobility. He has a bronze helmet, which could equally be of one of the several types illustrated in the earlier book, and his shield has a bronze boss. Most horsemen's shields were round as shown, but some would be oval or chopped oval instead. All were solidly constructed of wood, often faced with leather, and brightly painted. 73 shows some typical decorative patterns.

Only the richest men wore body armour, and this was invariably of iron mail with shoulder reinforcements, as illustrated by 1. Such men might have been brought together into a single elite unit by a really powerful leader, but they would be more likely to be found officering units of ordinary cavalry.

Cavalrymen usually fought by throwing a shower of javelins, then following this with a charge using the long sword or a javelin or light spear retained to thrust.

Northern Gauls tended to have blonde, brown or red hair, often plaited at the front. They shaved their chins but delighted in long moustaches.

Cloaks could be tartan, striped or bordered, scarlet, blue and black being favourite colours. Tunics were sometimes bright yellow, but other favourite colours for tunics and trousers were purple, scarlet and brown, again often arranged in stripes, chequers or tartans. As far as is known, choice of colours was a matter of individual taste, rather than of tribal significance. However, it is not impossible that some clans families or followers of a particular leader favoured particular combinations.

68. GALLIC OR BRITISH STANDARD BEARER

A chieftain would probably entrust his standard to a younger member of his family or a senior veteran warrior of his following. Whoever he is, this man either has no mail or has decided to dispense with its weight while fighting on foot. He wears a winged bronze helmet, has his front hair braided down each side of his face, and carries a sword with a rather old fashioned hilt. His shield is a chopped-off oval with an external central rib of

wood which is hollowed out at the centre to provide the single hand grip for fighting on foot. The region of the grip was usually reinforced by an external metal plate. As with Roman shields of this shape, a two grip system was apparently sometimes used when mounted, as is shown by 32.

The bronze or silver cock was a favourite device for a standard, with the boar a good runner up. Other animals such as bulls or stags were also used.

69 & 70. GALLIC WARBAND INFANTRY

The Gauls made very little use of the sling and only a little more of the bow, although on one occasion a special appeal for archers by Vercingetorix did result in a small but still significant body being collected together.

The men illustrated typify the traditional Gallic mode of infantry warfare, a wild charge with sword or light spear, accompanied by a shower of javelins. The sword illustrated is the best known variety, though some recent archaeological evidence suggests that it was not necessarily the commonest. It is a long clumsy slashing weapon with little point, said to bend in action and require straightening out with the foot. There was also a much shorter kind, possibly carried as a secondary weapon by men who fancied themselves as spear wielders. It should be noted that the long sword's hilt was not big enough to allow it to be used two-handed.

The chopped oval was the favourite shield for infantry, then true oval, with round and other shields a long way last.

Clothing is generally similar to the previous Gallic figures, but generally less elaborately patterned, and probably with a good proportion of undyed natural wool or linen. 70 has stripped off to the waist. Some fanatic warriors went even further and fought completely nude, stiffening their hair with a mixture of lime to make it stand out in a horrifying white mane. These congregated in small bands and were used much as Norse berserks later, their charge preceding the main enagement and hopefully disordering and dismaying the enemy. Such bands were called "Gaesati".

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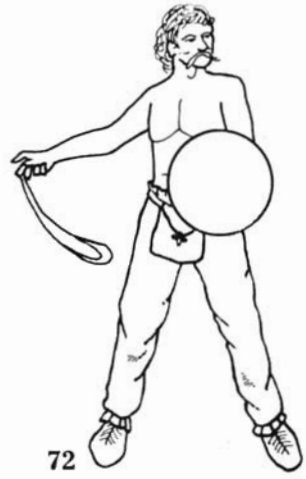
71



72

It is probable that a Gallic army was accompanied by small numbers of youngsters not yet strong enough to hold their own in melée and so restricted to skirmishing with javelins at a distance. These would be much like 78, though their moustaches would be but pale shadows!

71. GALLIC OR BRITISH MUSICIAN

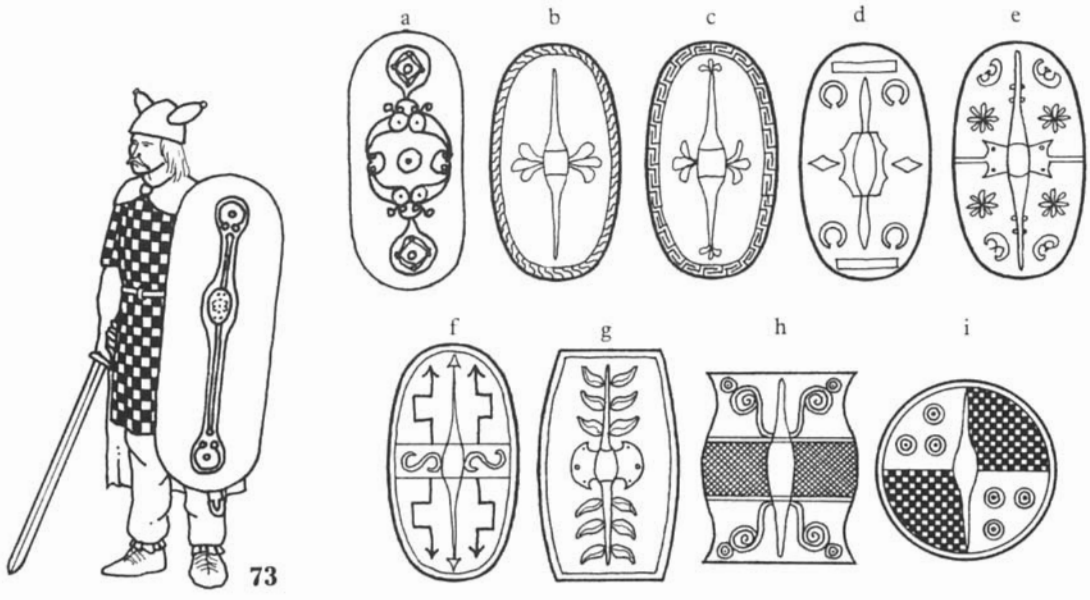
This man has the Carnyx or war horn. The playing attitude looks peculiar, but is based on contemporary illustrations. The head at least of the Carnyx is of bronze.

72. BRITISH SLINGER

The native British tribes which had been pushed back to the west by immigrants from Gaul just prior to the first Roman invasions specialised in sling warfare, and built enormous hill top fortresses with complicated systems of ditches and banks to take advantage of this weapon. As the ammunition used consisted of rounded seashore pebbles, range and effectiveness would be lower than those of the cast lead slingshot used by more advanced nations, though this would be at least partly compensated by the greater quantity of ammunition available.

One advantage of sling over bow is that the slinger can much more easily use a shield to catch return missiles while he is shooting, though we do not definitely know that the Britons did so. Other advantages mentioned by ancient writers are that sling missiles are harder to see coming than arrows, give nastier wounds which are more immediately disabling and difficult to treat, and can stun even heavily armoured men such as cataphract cavalry.

Archaeological evidence from Hod Hill shows that British slingers carried their ammunition in bags. The bag shown is a looped leather belt pouch from Denmark. The Britons dressed much as did the Gauls. However, the western tribes who made most use of the sling were mainly dark haired.



73. GALLIC OR BRITISH NOBLE WARRIOR AND SHIELDS

This is the sort of man that would command a Gallic or British foot warband, fight from a British chariot, or with the addition of a mail shirt as described under 67, command a Gallic cavalry unit. His bronze helmet is embellished with bronze horns. These, like wings, were a favourite decoration for leaders' helmets. Other crests are possible, as mentioned under 67, and many ordinary chariot warriors probably wore plain helmets or even did without.

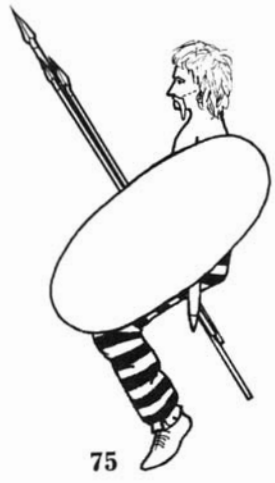
The shield he is carrying also suggests that he is a wealthy man, as the central spine is of worked bronze decorated with insets of coloured enamel. It is probably a footman's or chariot warrior's shield, being a little heavy for a horseman to wield effectively. 73a is the famous Battersea shield found in the River Thames. Its entire surface is of thin bronze, chased with raised patterns inset with enamel disks. Its appearance must have been spectacular, but sadly, it probably had no place on the battlefield since it is extremely flimsy. It was probably used only for ceremonial.

73b and 73c are from Halstadt in Austria and rather earlier than the next four which are contemporary and from the Arch of Orange. All have a central spine, which in some cases was incorporated in the decorative motif. The metal reinforcement over the hand grip was also often continued on each side as decoration. Many of the Roman auxiliary shields included under 59 have patterns obviously deriving from the same cultural background, and it is interesting that when the central wooden spine fell out of use it often survived as part of the painted design. Nothing is known of the actual colours in which Celtic shields were painted, except that they were bright and probably favoured reds and blues.

73h is from a north Italian relief, which shows it carried by a Celtic standard bearer in a horned helmet. A similar shaped but smaller shield is carried by a Roman standard bearer holding standard 56a on a British monument. 73i is from the same relief as the standard bearer.

All these shield patterns are typical of the northern Gauls and their relatives who migrated into Britain. They may be less typical of the northern and western peoples of Britain, where older styles might have lingered, especially among the lower elements of society.

74



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74 & 75. BRITISH LIGHT CAVALRY

As the nobles still fought mainly from chariots and the native ponies were smaller than the horses of Gaul, cavalry played only a secondary role in British warfare in support of the chariots. These two men are both based on contemporary British coins. 74 shows the interior of the bossless light shield of leather-covered basketwork and a bronze helmet rather like a jockey cap. This helmet is something of a mystery, since though a coin and one monument show the peak in front, several such helmets still surviving have cheek guards which are attached in such a way that the peak should obviously be behind. The majority have holes for attaching cheek guards. Some of these are where they would be expected if the peak was to the rear, but others are exactly half way back, so could be used for either direction. Many of the later helmets are certainly Roman. One plausible explanation may be that the Romans took over an existing design for their own purposes, reversed its direction and fitted cheek pieces.

The weapons carried are sword and javelins. The flimsy nature of the shields and the small mounts are indications that skirmishing from a distance was probably the preferred tactic.

76, 77 & 78. BRITISH INFANTRY

The first two of these are mere variants on the Gallic types. 78 is a lighter javelinman, a type more useful and therefore presumably more popular in Britain than in the more open country of Gaul. The shield design is a stylised horse taken from a contemporary British coin, and is included to give some idea of the local forms of art that might have supplemented the continental shield patterns, especially in the north and west. The drawings taken from Pictish symbol stones included as 103 may also offer some clues as to the art of their predecessors and neighbours in north Britain.

The traditional difference between the British and the Gauls is that the British painted or tattooed themselves blue with woad. Parallels with other races at their stage of development suggest intricate curlicue patterns of lines over the exposed body surface. Although Caesar reports it, the custom was probably dying out in the south when the Romans invaded, though it continued later in the north, especially among the Picts "The Painted People". 96 to 102 show possible patterns. In the south, the custom probably continued longest among those fighting as Gaesati, who may even have had a frightening display in mind when they took off their clothes. Woad produces a slightly greenish mid blue colour. If you feel like trying it for yourself, the Butser Iron Age Farm sells packets of seed!

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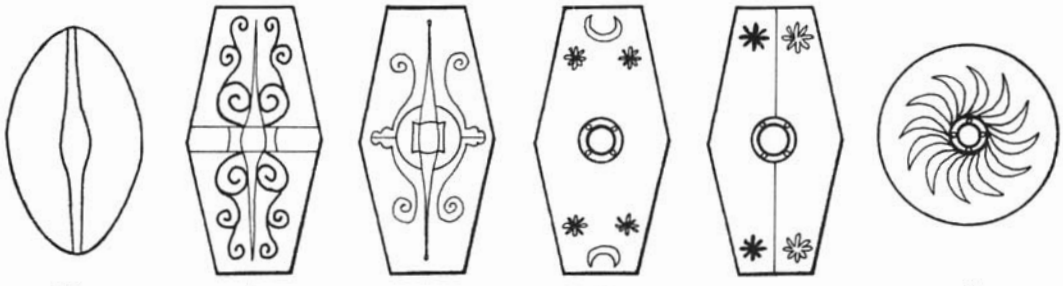


79a b c d e f

79 & 80. EARLY GERMAN INFANTRY

The normal German garment was a cloak, which was sometimes the only garment apart from a loincloth. However, most would have trousers like 80, these being much closer fitting than the Gallic type. Really wealthy men would have a tight long sleeved tunic as well, but these would fight mounted most of the time.

Hair styles varied. The Suibi knotted their hair behind or on top like 79, and the young men among the Chatti grew their hair and beards long, while the seasoned warriors cut and shaved. Some tribes tended to dye their hair red. Most had light or mousy hair to start with.

Shields could be round like that of 80 with a heavy iron boss that was used offensively, a narrower version of the Gallic flat plank shield with no central spine but a boss like 79, a spined oval like 79a, or hexagonal. The Romans thought of the hexagonal shield as being typically German and tended to give these to German cavalry units that they raised. It is not quite certain that they were right, but if they were 79b to e may represent German patterns. The patterns are on the whole little different to Celtic ones, which has led some to postulate that the hexagonal shield is just a straightforward development of the chopped oval, so could equally be Celtic. 79f is from the same trophy relief as 79b. Shields were brightly painted.

Clothing was usually dull, either left natural dark wool or dyed in dark greens, blues or browns. Skins were sometimes used, spotted ones being preferred.

80

81

82

Swords were rare, the most usual weapon being the Framea, a short javelin. Each infantryman carried several of these. They could be used either for thrusting or throwing. There are also several references in Tacitus to a front rank armed with long thrusting spears instead of Framea and supported by the other ranks' missiles. He also mentions the occasional use of massive wooden clubs.

By the 3rd century, swords had become quite common, heavy throwing spears called Bebrae had displaced both Framea and thrusting spears and shields were mostly round.

81. GERMAN CAVALRYMAN

These were usually members of the wealthiest class. Like the man illustrated, they wore tunic and trousers as well as cloak, carried a shield, usually round, and the Framea. The wealthiest might add a sword or mail shirt, but only a chieftain a helmet.

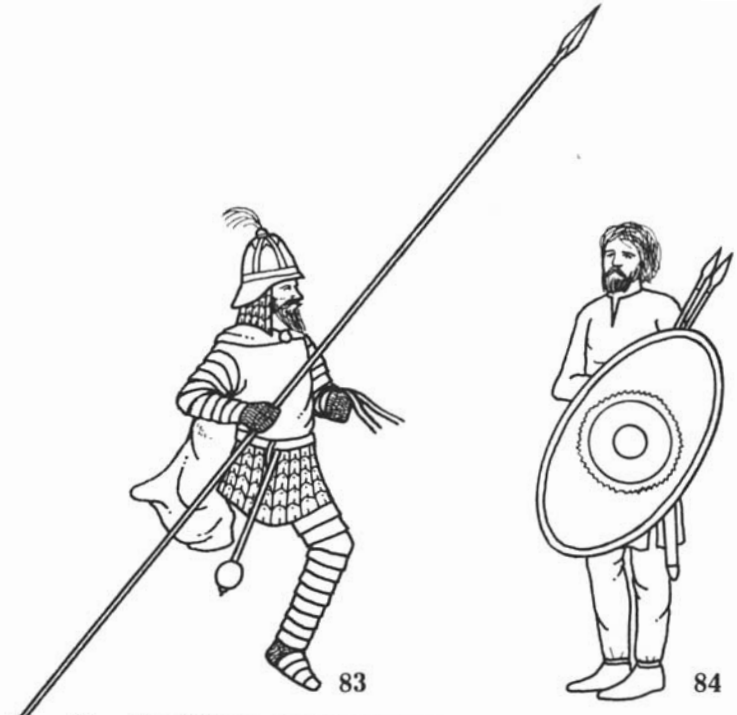
Helmets and mail might be of Celtic type, but spangenhelm type helmets like that of 117 are also a possibility. Swords became commoner as time went on and were carried by the vast majority of cavalry by the 3rd century. Unlike Celtic swords, they were of good steel and well adapted for thrusting as well as cutting.

German horses were small and ugly, but must have been fairly biddable, as they were trained to stand while their riders fought on foot. On the other hand, German cavalry were taught to wheel only to the right, which kept their shields towards the enemy but limited their manouvre options. They seem to have enjoyed a moral ascendency over Gallic cavalry. They were often supported by selected young footmen.

82. PARTHIAN HORSE ARCHER

These were recruited from the lesser gentry and their retainers. They dressed in a loose wrap around jacket secured only by a belt and very baggy trouser-like leggings. They are most often portrayed as bare headed except for a browband, but occasionally also in the three-lappet Persian and Skythian caps illustrated for those nations in *Armies of the Macedonian and Punic Wars*. The jacket was often edged in patterned material or a contrasting colour. Nothing is known for certain of their colour preferences, but they were most likely similar to those of other peoples in their general area. I would expect them to use a lot of undyed natural wool, browns, and the richer and darker shades of other colours.

The great majority seem to have been armed only with a powerful composite bow and long knife. A few are depicted with long heavy straight swords like that of 125, but apparently not shields.



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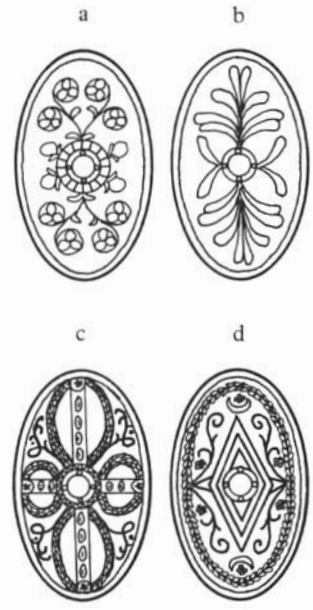


83. PARTHIAN CATAPHRACT

This man is taken from a Sassanid Persian propaganda sculpture depicting their victory over the Parthians. It is quite likely that there was considerable variation between individuals, and that men similar to 121 and 127 might equally be at home in a Parthian army. We know from contemporary authors that the cataphracts were exceptionally well protected by iron armour, needed no shield, were armed with a 12 feet long lance called a Kontos, and charged ponderously at the trot on horses equally heavily armoured in iron or bronze.

The man illustrated is armoured in a combination of lamillar, mail and laminated plate. He wears a short surcoat and a cloak, and carries a heavy mace as his secondary weapon. Only the king, great nobles and their dependants could afford such fabulously expensive equipment and a horse capable of carrying it easily, so it is likely that surcoat and possibly cloak would be richly coloured and ornately embroidered. However, there is a suggestion in one source that the cloak could be used for concealment, implying that it was at least less conspicuous than the armour underneath.

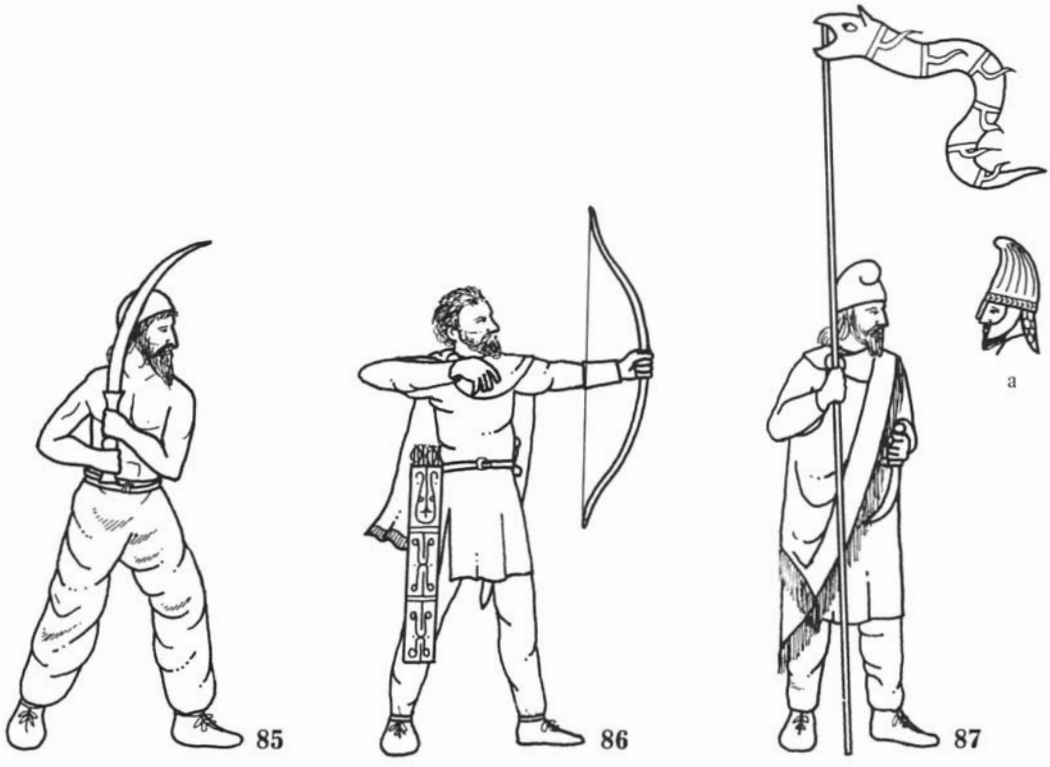
The usual Parthian standard was probably a Draco like that of 55 or 87.

84, 85 & 86. DACIAN INFANTRY

The Dacians were of Thracian extraction, but unlike the earlier Thracians, fought almost entirely on foot. A very few cavalry similar to 84 are illustrated on Trajan's Column, but they generally relied on Sarmatian allies for that arm. The most common troop type was that represented by 84, armed with javelins and a short sword and carrying an oval shield as his only protection. He wears a tunic split at the sides and neck, not too baggy trousers tied in at the ankle, and would have a short cloak if it had not been left off to show the split neck.

86 represents the next most common type, the foot archer. His ornamented quiver comes from the foot of Trajan's Column, as do the shields shown as 84c and d. The shield carried by 84 and 84a and b are shown carried by Dacians in the Column's battle scenes.

However, the Dacian weapon most feared by the Romans was the two-handed Falx wielded by 85, capable of taking off an arm or leg at a single blow. There were several variants of this weapon with slightly different



handles, some of them longer and some slightly curved so that the whole weapon was slightly "S" shaped. 85 himself is a Bastarnian, a sub-tribe of the Dacians proper. This is shown by his skull cap, baggier trousers and bare chest. This does not mean that the other Dacians did not use the Falx, they did, but Bastarnae feature in some of the most exciting sculptured scenes of the campaign at Adanklissi.

Little can be said about possible colours except that the Thracians liked checks and stripes, and that Dacian shield patterns are somewhat like those of the Gauls, who also liked checks and stripes.

87. DACIAN ELDER WITH STANDARD

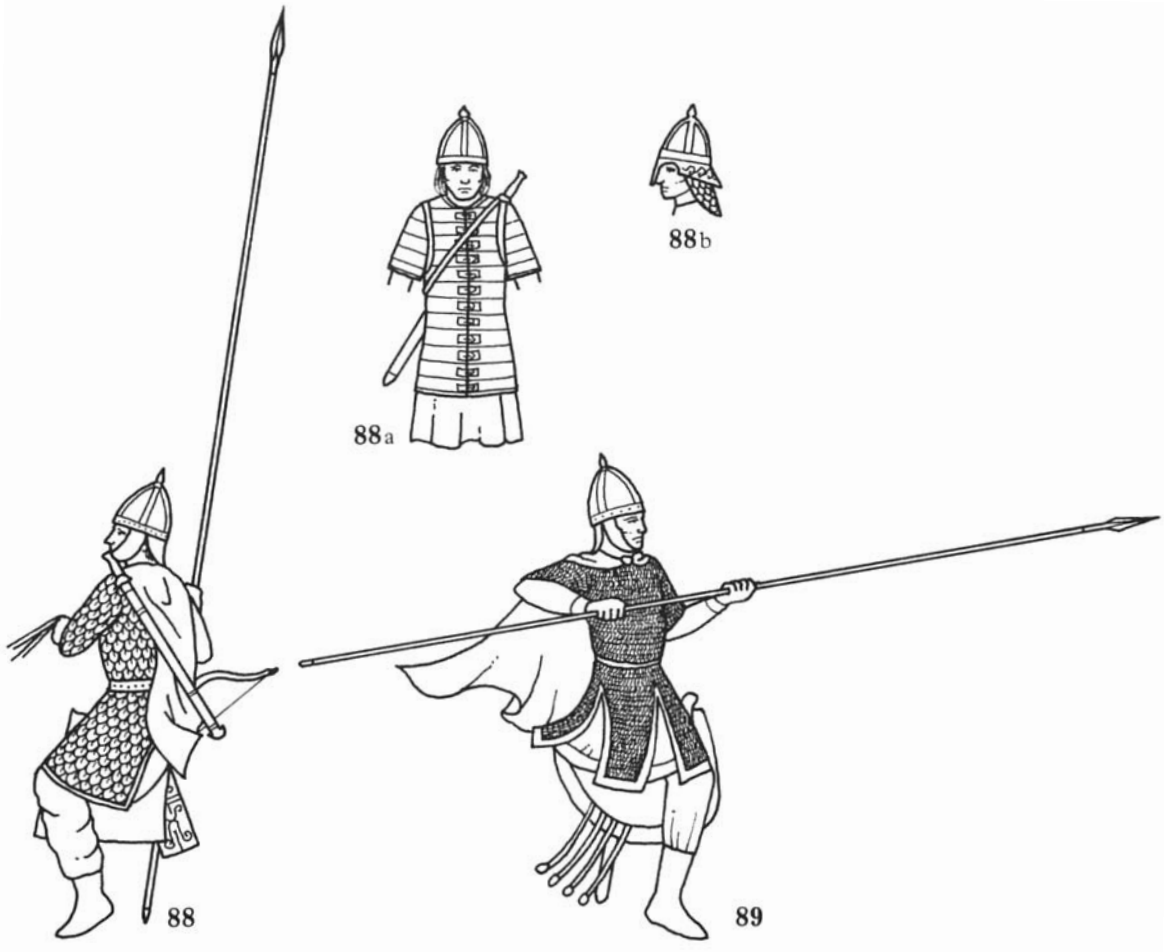
This man is shown to be an important personage by his cap, long tunic and fringed cloak. His standard is a Draco with hollow metal head and windsock cloth body.

87a shows the short of helmet that would be substituted for the cap by a chieftain, who would also carry shield and sword instead of a standard. Especially important leaders such as the king could have armour like that of 88b.

88 & 89. SARMATIAN CAVALRY

88 represents a typical Trans-Danubian Sarmatian of the kind that raided Roman territory and were allies of the Dacians.

He wears a spangenhelm type helmet and an elbow-length coat of greenish blue scales of horn from horses' hoofs. Only the richest of Sarmatian nobles could afford metal scale armour, but light, tough horn was an acceptable substitute. Such a noble might substitute a more ornate helmet like that of 88b, or even 87a. A man who could not even afford horn could have red lacquered rawhide scales, or rawhide laminated armour like that of 88a, whose helmet also lacks nose, cheek and neck guards. About half the army's cavalry would ride horses which were also protected all round with horn or rawhide scales. The Sarmatian horse was tough, fast, but on the small side, so in most cases this would have been his limit anyway.



His weapons are a Kontos, a weakish self bow carried in a case with separate quiver at his right, and a sword slung across his back. The weakness of his bow and his lack of a shield did not deter him. His favourite tactic was a wild charge with his Kontos held in both hands. This took a lot of stopping, but if it was stopped, he was considered fairly easy meat by his Roman opponents.

It is likely that the main force of charging cavalry would have been supported by small numbers of immature youths without armour and carrying only bows, but it is really anyone's guess what these would look like.

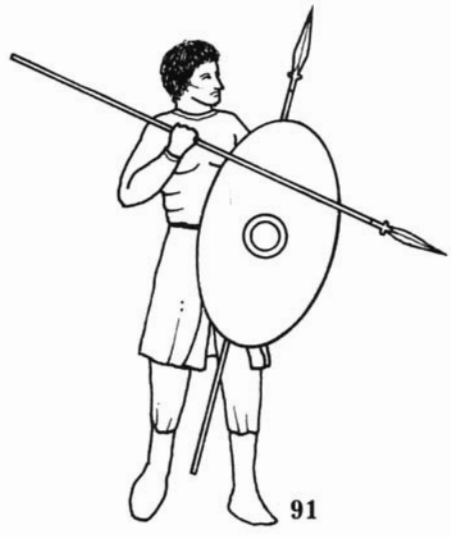
Western Sarmatians seem to have been fond of bright colours, but not so fond as the Celts and Germans of keeping themselves and their clothes clean, this presumably being due to their nomadic background. They were dark haired and sallow featured.

89 is a different kind of Sarmatian, those that had settled down in the rich corn growing area north of the Black Sea to rule a population of peasants and Greek town dwellers. He wears an iron mail coat with four slits at the bottom, paid for by the peasant taxes and made by Greek craftsmen. He has discarded his bow, hangs his sword at his side, rides an unarmoured horse and has learned to wash. Men like this probably provided the Sarmatian mercenary cavalry of Mithridates of Pontus.

90. SARMATIAN STANDARD BEARER

This man is a Black Sea Sarmatian like 89, since he has the four split coat, though of horn scales, has his scabbard at his side, and his standard is a vexillum instead of the Draco of the westerners, which would be like that of 55.

90



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92

91. SARMATIAN INFANTRYMAN

This is a Black Sea Sarmatian, or more probably, one of their subjects. He carries shield and javelins, but could equally have bow and quiver instead. The most likely secondary weapon is a short sword. The majority would probably wear solid colours, probably not so bright as their masters, or Thracian stripes and checks, but some might have the white tunics with coloured edging of Greek colonists.

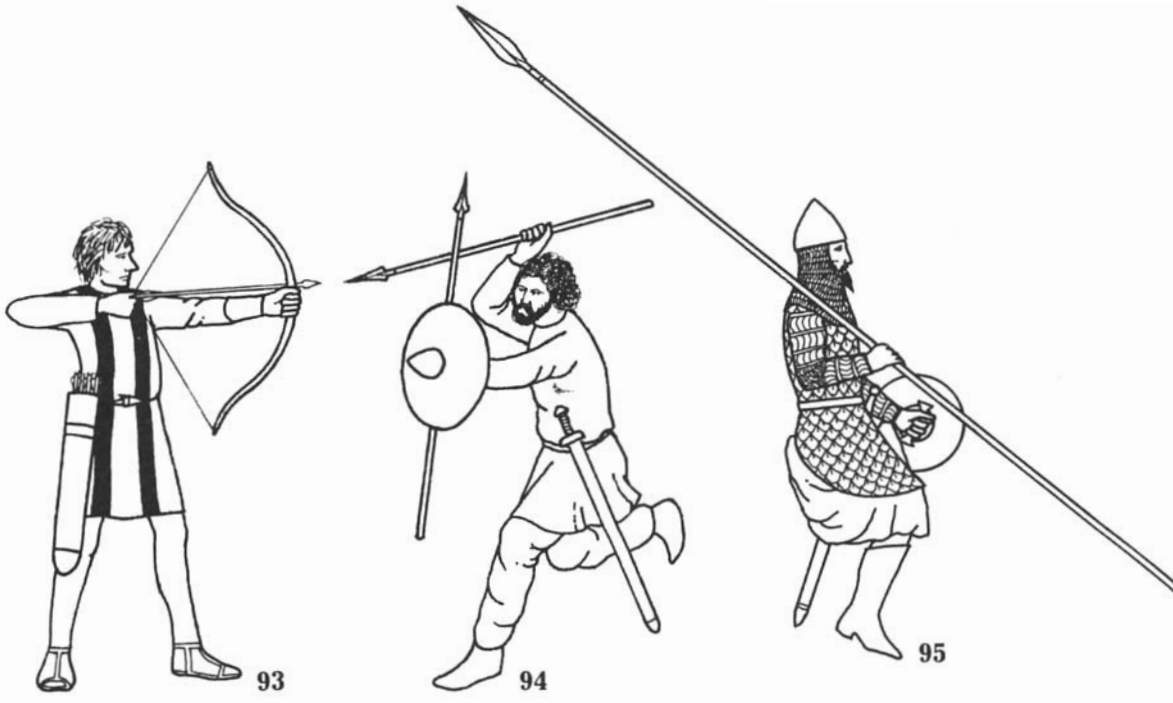
Arrian's *Order of Battle Against the Alans* implies that some of the former Greek colonies may have had a disciplined militia of mailed infantry armed with long thrusting spears. These are most unlikely to have maintained the traditional hoplite equipment, so I suggest that they might have the helmet and standard of 90, the shield and short sword of 91, the mail coat of 89 or possibly a shortened waist length version, a 12 feet long spear grasped in one hand, and standard Sarmatian shirt, trousers and boots.

Trans-Danubian Sarmatians could levy infantry from the villages that supplied their corn. These would be much like 91, but with natural undyed wool providing the main clothing colours, and any dyes that were used being dull vegetable colours like russets, dark greens, greys and ochres. Archers would predominate. There are also references to infantry armed with two-handed axes. These were most likely peasants with felling axes, but it is not inconceivable that some may have had helmets like 90, and a lesser number quilted armour or even leather armour like 88b.

92 & 93. JEWISH INFANTRY

The recent "Bar Kochba" excavations have demonstrated that the costumes illustrated by the synagogue wall paintings at Doura were also being worn earlier, at the time of the revolts against Roman rule. The tunic was usually bleached wool with purple stripes, but sometimes dyed, with or without stripes of other colours. Cloaks were either a dark natural shade or dyed, those of extrovert or richer individuals often in bright colours. Legs were bare, complexion medium, hair usually brown or black, but with occasional redheads or mouse blondes.

The Jews fought on foot, some carrying bows, but most with javelins and long curved daggers. A few had swords, and a sprinkling including some officers wore captured mail or scale corslets. Josephus, the Romano-



Jewish quisling historian, describes them as carrying long shields, probably the flat oval or chopped oval with spiked boss shown in the Doura paintings.

They fought with fanatic fervour, sometimes suiciding rather than be taken prisoner. Their largest disadvantage was their lack of cavalry.

94. ARMENIAN INFANTRYMAN

This man is typical of the Kurds and Armenians who emerged from their mountains to raid the more fertile lowlands, or take service as mercenaries with the Romans or Sassanid Persians. During the first part of our period, they had an independent state of their own, often fought over by Persian and Roman, playing both ends against the middle, and occasionally partitioned. Although the great majority of infantry were armed with javelins and shield, a minority were archers and slingers rather like 131 and 132. 94 himself is taken from a Sassanid Persian relief. It could be argued that he is probably a leader and that his sword would more typically be a much shorter weapon. In earlier times, Armenians could be identified by their cap. This was a version of the earlier Persian three-lappet headgear with the top vertical instead of folding over, but sewn to produce three little bumps rather like a cock's comb. The side lappets were often pulled up and knotted together just behind the crown. Such caps may still have been worn, but we have no evidence for this.

The army assembled by Tigranes for his great battle against Lucullus' Romans in 69 B.C. differed from all later armies in incorporating such unusual other troop types as pikemen from the old Seleucid military settlements in Syria and Mesopotamia, imitation legionaries trained by Roman exiles, Iberians from Georgia armed with long thrusting spears, and Albanians from the Caspian Sea area dressed in skins and apparently armed with javelins and crescent-shaped pelta shields.

95. ARMENIAN CAVALRY

The man illustrated is in fact from very much later than our period, but is included to show one version of what an Armenian cataphract may have looked like. Lucullus ordered his infantry at Tigranocerta to strike at the cataphracts unprotected thighs. If he meant the riders' thighs, then the riders were obviously only partly protected and may have looked much like 95. However, it is quite possible that he meant the horses thighs, in which case Armenian cataphracts may have been like 83, 121 and 127. The horses would also have been

96

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protected, in the first case with rawhide scales or thick felt all round, or with metal scale protection for head, neck and chest only; in the second case with all round protection of metal scale armour, leather or felt. Cataphracts usually formed only about a third of an Armenian army's native cavalry, the rest being horse archers. A conjectural reconstruction of these could be much like 129, but without the javelin and Persian hat, an Armenian cap possibly being substituted for the latter, and boots like those of 95 added.

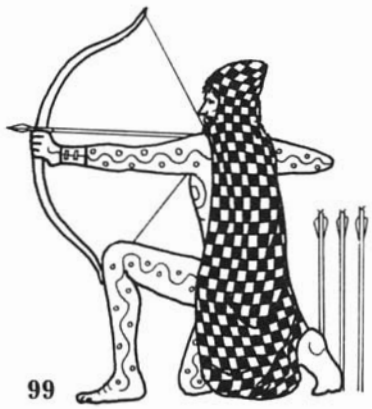
96, 97, 98, 99 & 100. PICTISH INFANTRY

The Picts were a confederacy of tribes which absorbed those previously known as Caledones during the 3rd century. Their cultural pattern seems to have spread from the north east of modern Scotland, possibly from the Orkneys. They favoured coastal sites, which during the earlier part of their expansion they fortified with the large circular stone towers called "Brochs", and used skin boats for transport and raiding. Excavation of Brochs and the wheel houses that tended to replace them shows that the Picts were very short of metals and had extremely insanitary habits. However, they were extremely artistic and left many rock carvings from which these illustrations are taken.

"Picti" means painted. I interpret this to mean tattooed or painted with woad designs, rather than with woad smeared all over, partly from a reference in Claudian, and partly because other ancient peoples such as the Thracians and Skythians are known to have done this. Woad gives a blue-green dye, and whorls like those depicted would have been as effective as the smudges of pigment on the cheekbones of a modern soldier at hiding the pink of the naked body. There is also a magical reason for its use, as the leaves of the plant are shaped like arrowheads, giving it great protective value against arrows!

The most important article of clothing was a large cloak, which from later practise in that area I suggest was woven in an elaborate check or tartan pattern of the tweedy colours associated with vegetable dyes. This would have provided excellent camouflage, and the pose of 99 suggests that it was used in that way. Rich men might have a shirt dyed with saffron from Crocuses, producing a light yellow original colour. Others made do with cloak and loin cloth. Very few wore shoes.

All Picts old enough to be hairy had long hair, moustaches and straggling pointed beards. All hair colours were found among them, red being quite common. Complexions were generally fair. Unlike the Scots, they combed their hair.



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96 is a chieftain from a dark age grave at the Brough of Birsay on Orkney. His tunic has a patterned edge and he wears a short sword. His shield is of the square shape that will be described later, and bears the only patterned design known. He wears a heavy silver chain around his neck, and as late as the 3rd century at least, could fight from a chariot.

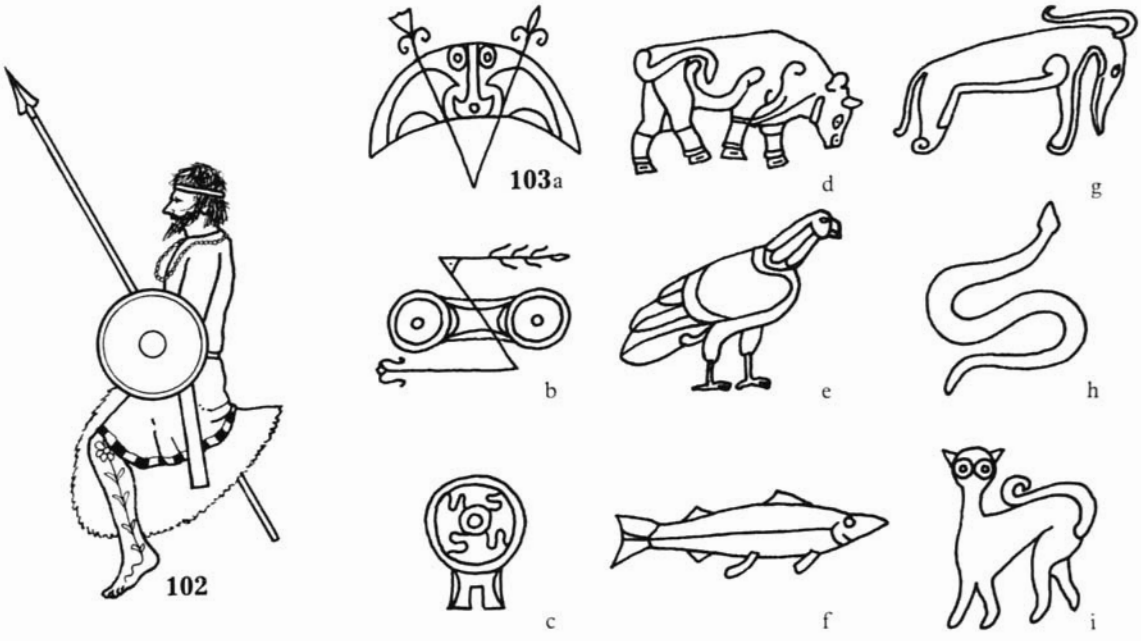
97 is a rank and file warrior. His only weapon except for a knife is a long thrusting spear which is shown on one stone being held underarm in two hands to keep off some rather Roman looking cavalry. His square shield is of hide stretched on two crossed sticks held at the juncture.

98 is another wealthy warrior in a yellow shirt, armed with a short axe and carrying a more advanced type of shield. This is still of hide, but circular, convex and embellished with a spike.

99 is an archer lurking in ambush portrayed on another stone. The Picts were unique among the Celtic peoples in making extensive use of the bow. This was relatively small and weak, and the flint arrow heads, while more effective than iron against flesh, would have very little penetrating power against armour. However, they may have been poisoned, a common practise among peoples hunting with weak bows. Very surprisingly, there is hard evidence of the Picts using crossbows, both from one of the stones and from two separate archaeological finds. These probably derived from Roman sources, as their use by the later Roman army is mentioned by Vegetius and a hunting version appears on a monument from Roman Gaul. The numbers in Pictish hands were presumably small.

100 is a relative youngster and has discarded his cloak to bound about unencumbered as a skirmisher with javelins.

Two other possible types are omitted for lack of solid evidence. One is an equivalent of the naked fanatics known in other Celtic armies as Gaesati. I have to admit that I see the Picts as a little too dour for such behaviour, a view possibly influenced by the regional preference for clumps of sensible spearmen rather than the sword waving heroes of the Scot-descended west. The other is based on the possibly matrilineal organisation of Pictish society, which led Rosemary Sutcliff, the historical novelist, to postulate a wild band of under-dressed warrior maidens as a possible fighting element!



101 & 102. PICTISH LIGHT CAVALRY

Many Picts are depicted fighting mounted, armed with javelins or spear and carrying round shields, often with spiked bosses. The riders invariably wear a tunic and sometimes leave off their cloaks. 101 seems to have shoes, so may be considerably later than 102. Mounts are small, making the large saddlecloths look even larger. Such cavalry would probably not be capable of making much impression on regular cavalry or solid infantry, but could still do a superb job of scouting or driving off cattle.

103. PICTISH SYMBOLS

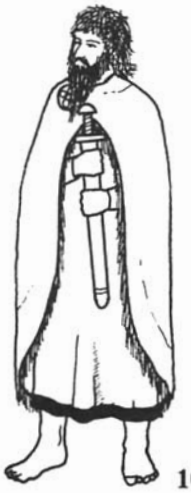
These symbols are some of the commoner of those found on the carved stones, and are included as a possible hint as to shield decoration and standards. The free-flowing animal designs speak for themselves, with the possible exception of the famous "swimming elephant". The meaning of the others on the left largely remains a mystery. The upper pair may represent arrows breaking on shields and the lowest a mirror case — but probably do not.

I should make it plain that only the symbols are found on the earlier stones dating to the period we are presently interested in. Those with the figures of people are considerably later, but as there were few outside influences, changes in dress and weaponry probably did not proceed very fast.

104, 105, 106 & 107. SCOTS-IRISH WARRIORS

Not content with almost incessant warfare between their various petty kingdoms at home, the Scots of Ireland increasingly raided the western coasts of Britain during the 4th century. Permanent settlements were made in Pembrokeshire and later Galloway, the emigrants to the latter finally spreading out to conquer and amalgamate with the Picts in about 850.

104 is a chieftain. He wears a semi-circular cloak with fringed edge, fastened at the shoulder with a large bronze and enamel brooch. Cloak colours mentioned in early Irish poetry include green, dark grey, purple, black, red, red-brown, pied, yellow, dun and many coloured. Under his tunic he wears an unbelted tunic. This would most likely be dyed a light yellow with saffron, this being held to discourage lice, but could also be



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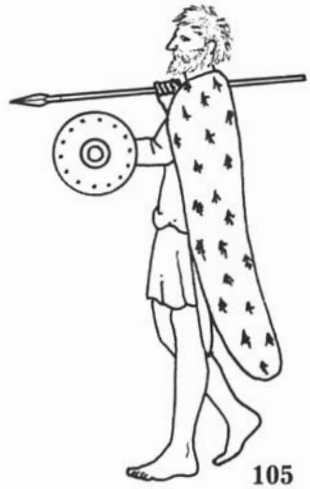

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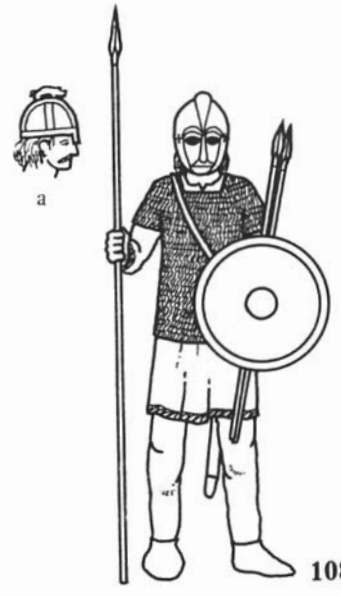
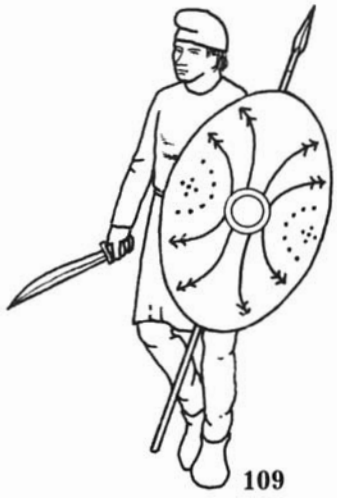


a

108

white or red-brown with a contrasting border or stripes. His hair and beard are uncut and uncombed. He carries his scabbarded sword in his hand. At home, he would normally fight from a chariot with javelins and shield.

105 is a lower ranking member of the warrior aristocracy that had imposed itself on the previous population and was the dominant type among the mixture that went to make up the warband. His hair is fair or reddish. He is armed with javelins, short sword and a small leather shield reinforced with bronze studs and boss. His saffron-dyed tunic has been pulled up through his belt to shorten it. His cloak is rather more likely to be of dark natural wool than dyed, but richer individuals might have one dyed in one of the cloak colours mentioned above. The cloak has small tufts sewn to it at intervals. Such men would provide the chariot warriors at home as well as the bulk of the foot warband. However, it is doubtful if the hide covered Curraghs used for sea raiding had room for many chariots, if any.



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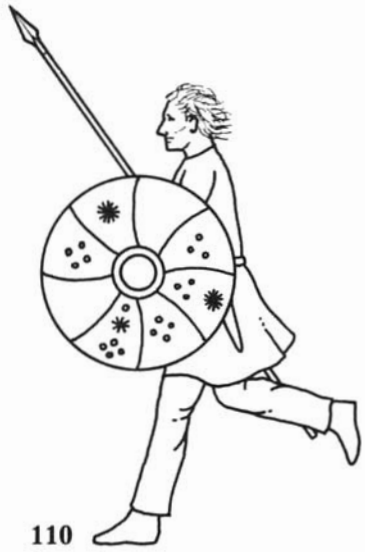

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111

106 wears the dress associated with the lower classes, believed to be descended from previous inhabitants of Ireland. His hair is dark. He wears short trews which could be dark natural wool, bleached wool, or striped in bright colours. His only other garment is an open jacket which could be brown or black dark natural wool or dyed red. He has the usual armament of short sword, round parrying shield and javelins.

107 is a variant of 105 carrying the large convex basketwork and leather shield favoured in Ulster. Like the other Irish shields, its leather was sometimes dyed one colour overall, but was never painted with designs.

At this period, the Irish made no use of cavalry or archers. They may possibly have used a few slingers.

108, 109 & 110. SAXON WARRIORS

Saxons wore a long sleeved tunic, trousers and often a soft leather or cloth cap. Upper class warriors usually had their clothes dyed in some sober colour like red or dark blue. Light blue and yellow were considered a little flighty. Peasants would be more likely to dress in browns or natural wool shades. Most Saxons had light brown or fair hair.

108 is almost certainly a king. Mail was very rare, and the helmet is based on that from the royal ship burial at Sutton Hoo, which incidentally is a jazzed up late Roman cavalry helmet. 108a shows an alternative helmet for someone less important.

109 is typical of the upper class warriors that provided the cutting edge of the warband. He carries a light throwing spear and a heavy cutting sword called a Seax. Heavier throwing weapons such as the Angon and

Francisca are known from Saxon graves but are relatively rare. It is often very difficult to distinguish between the graves of late Roman soldiers of Germanic descent and those of early Saxons, as the weapons, buckles and shields are often identical. Some cemeteries seem to demonstrate continuity, the first arrivals being buried in Romano-British cloth and Roman military hobnail boots and later burials being normal later Saxon. 22 would probably not raise many eyebrows if he appeared alongside 109 in a Saxon warband.

110 is more likely to be a peasant called from the plough to fill up the back ranks and increase solidity. He is armed with a spear, knife, and possibly a javelin or two.

Saxon shields were stoutly made of solid planks of wood and with heavy projecting iron bosses. They were round or near round ovals in shape. The two painted shield designs illustrated are from later Saxon manuscript illustrations, but may serve to suggest the general style favoured.

111. VISIGOTHIC INFANTRYMAN

The Visi, as they called themselves, did not take to the horse to anything like the extent of their Ostrogothic cousins. Nobles might fight on horses, but the bulk of the army remained infantry. Unlike those of the Ostrogoths, the great majority of these infantry were close combat troops like the man illustrated.

He wears the standard Gothic tunic of natural fawn linen, edged at the hem, but not the cuffs with a coloured or fur band, and with very long sleeves. The cloak could be natural dark wool or be dyed in solid colours, not too bright. The peculiar coffin shaped shield was traditional, but most likely outnumbered by round or oval types like those of 109 and 110. He is armed with light javelins and a longish sword. Goths let their hair grow but trimmed their beards. Hair would mostly be light brown or mouse-blonde.

112, 113 & 114. FRANKISH INFANTRY

Except for a few nobles, the Franks fought almost entirely on foot. They had a very few archers, relying on masses of close fighting infantry armed primarily with a heavy throwing spear called an Angon like 112, or with the Francisca, a heavy throwing axe capable of splitting shields or armour, like 113. Their secondary weapon was a long straight German sword. Shields were round, solidly constructed of wooden planks and were held by a single grip behind the heavy iron boss.

They shaved their chins but let their moustaches grow. Some grew their hair long, some kept it short, and some shaved their napes but piled the rest into a topknot, like 114. Hair colour would be predominantly light brown or fair.

Trousers were usually light natural wool colour, cross gartered to the thigh with leather straps. Tunics were most often striped in bright colours such as red, blue, yellow and green. Green was also a favourite cloak colour, usually with a red border. Some wore fur jerkins like that of 112.

A favourite shield pattern had curved segments radiating from the centre like that of 110.

When the Franks imposed themselves on Gaul as a warrior aristocracy, they did not displace the previous population, or disband the city garrisons. These occasionally took the field under Frankish command, still carrying their Roman standards and wearing Roman military boots. Presumably they would still be much like 22. It is doubtful if they were either efficient or enthusiastic.

115

116

117

115. OSTROGOTHIC ARCHER

The Tervingi, as they called themselves, took to the horse with enthusiasm. The nobles and gentry turned themselves into cavalry, and the infantry became almost entirely archers like 115. They used a self bow of moderate strength. Lacking any protection and any close combat weapon much better than a knife, they were understandably nervous about being charged and often failed to support their cavalry closely enough. Clothing and colours were the same as those of the Visigoths.

116. GOTHIC MEDIUM CAVALRYMAN

This man is typical of the mass of the Ostrogothic cavalry when first heard of. The Gothic victory over the Romans at the Battle of Adrianople is usually ascribed by modern writers to the Gothic use of stirrups and lances. Unfortunately for this theory, the stirrup did not arrive for another 200 years, and contemporary accounts of the battle repeatedly refer to the Gothic javelins! When infantry hotly engaged in front are charged in the rear by cavalry, there is no need to look for additional reasons for their defeat.

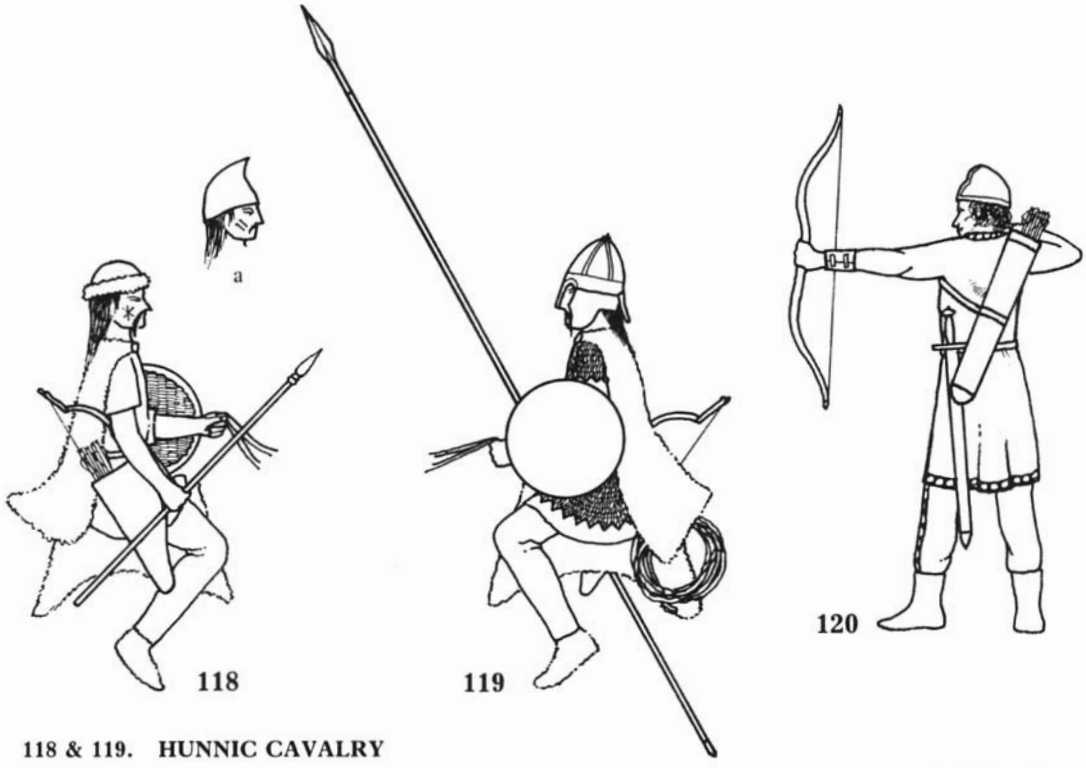
117. GOTHIC OR VANDAL HEAVY CAVALRYMAN

At first, only the richest Goths would be able to afford armour. As they came into possession of Roman territory and arms factories, the proportion of armoured men would have markedly increased. By the time that the Ostrogoths had settled themselves in Italy and the Vandals in North Africa, at least a majority must have had armour. We even hear in Procopius of a picked body of Ostrogothic cavalry with partly armoured horses. The Visigoths and Vandals did not use horse armour during our period.

Javelins and light spears continued to be the primary weapon for all three nations, though the Ostrogoths in Italy often had small numbers of men with Kontos, even if only Byzantine deserters. Secondary weapon continued to be a German sword.

The man illustrated wears a spangenhelm type helmet, but any of a number of late Roman helmets might equally be in use.

Two other nations of rather similar cavalrymen employed by the Byzantines as mercenaries when they were not fighting them were the Lombards and Gepids. These differed from Goths mainly in that they would have substituted a 12 feet long Kontos for the lighter spears and javelins. Lombards grew their beards long and pointed, and both they and the Gepids wore their hair in long braids at the front.



118 & 119. HUNNIC CAVALRY

Huns wore their hair long, but shaved their cheeks, which were often ceremonially scarred. Their short sleeved tunics were made of natural wool or goat hair, or of fieldmouse skins. Cloaks were usually furred. They wore a brightly coloured cap trimmed with fur, of which two types are illustrated by 118 and 118a.

118 is a light cavalryman of the kind that made up the great mass of the army. He is unarmoured, relies mainly on a powerful composite bow with which he is highly skilled, but is equally prepared to fight at close quarters with a bone pointed javelin or light spear, lassoo, sword or club. He has a small round leather shield strapped to his forearm.

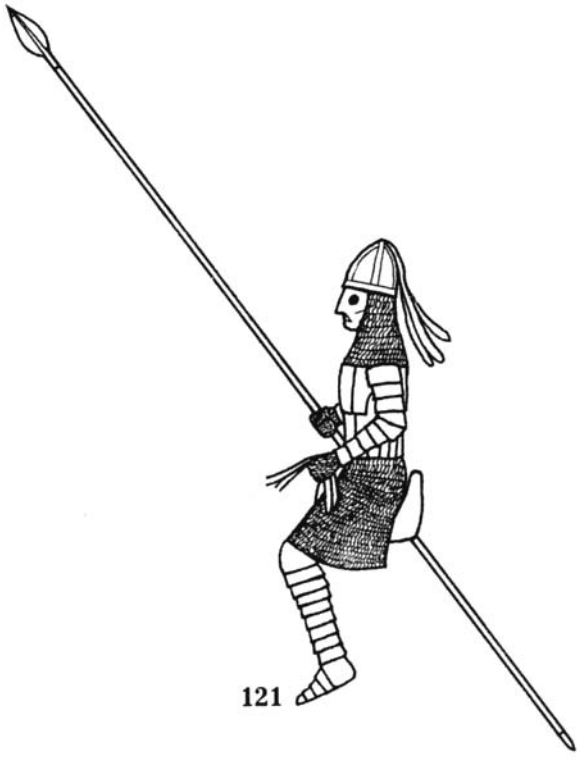
119 is a noble. Like all the nomadic nations, the Huns had a small core of rich nobles who possessed body armour and helmets and carried a Kontos. The helmet shown is a fairly common late Roman cavalry type. The helmet worn by 43 is also a possibility for a Hunnic king, as one such helmet has turned up from the Danube area plated all over with gold and crudely decorated with incised markings and precious stones.

120. PALMYRAN ARCHER

Palmyra was a city state allied to Rome controlling the main trade routes to Persia. Palmyran archers were famous, many units serving in the Roman army. During the 3rd century, the ruler Odenathus defeated a powerful Persian army. His widow, Septimia Bat Zabdai or Zenobia, rebelled against Rome and took over much of the eastern half of the empire before being defeated by Aurelian. According to the histories, Palmyra was then utterly destroyed. In fact, damage was only minor and Palmyra became a Legionary fortress under Diocletian. Palmyran units continued to serve in the Roman army.

The man illustrated wears the standard Palmyran dress, a longish tunic with contrasting bands at the throat, down the centre of the front, round the hem, and usually at the cuffs as well. Similar bands run down the front of each leg. The cap was not always worn. Colours were probably the same as for the light cavalry.

The quiver containing the arrows for his powerful composite bow was not always carried across the shoulders, but could instead hang from the belt. The sword could be replaced by an axe and a small round parrying shield hung from the belt like 26.



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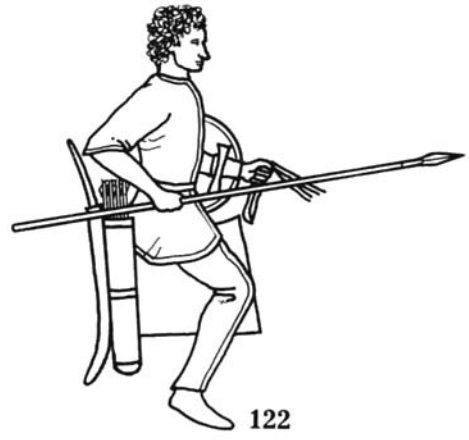

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Most Palmyrans were clean shaven and their hair of medium length. Being of mixed Syrian and Greek descent, complexions would be medium, hair dark brown or black.

121. PALMYRAN CATAPHRACT

While the foot archer was numerically the most important troop type of the Palmyran army, the one that caused the most consternation among Aurelian's army was the cataphract cavalryman. Sometimes the Roman cavalry could deal with them by keeping out of reach and enveloping their flanks, but on other occasions they rode the lighter troops down. They later formed the model for the cataphract regiments introduced into the Roman army by Aurelian. These were later greatly expanded by Constantius II. The main source is a picture scratched on a wall at the Palmyran satellite city of Doura Europos, which however is confirmed in detail by descriptions in the works of Ammianus Marcellinus and Julian.

The man shown wears a long hooded coat of iron mail. A sort of corset of overlapping iron plates is strapped over this around his trunk. His arms and lower legs are protected by flexible armour of overlapping iron plates. His protection is finished off and made nearly total by a helmet with attached bronze face mask, mail gloves and iron shoes. His horse is protected all round by armour of iron or bronze scales, one set of each having been found at Doura.

He is armed with a 12 feet long Kontos and a mace. He needs no shield.

122 & 123. PALMYRAN LIGHT CAVALRY

Both these are based on wall paintings from Doura portraying traditional stories but which seem to reflect contemporary dress. 122 is probably typical of Palmyra's regular light cavalry, 123 of the young citizens that might turn out in emergencies.

123

123a

124

The wall painting showing 122 is matched by tomb paintings of men dressed in the same two colours, but sometimes reversed. I take this as evidence of uniform. If so, the Palmyran military uniform for officers was a maroon tunic with dark greenish-bue bands and greenish blue trousers with maroon bands. Rankers reversed these colours. Saddle cloths were the opposite colour to the trousers, and such leather work as belts, scabbards, quivers and horse trappings always maroon. 104 seems to have rolled his sleeves up. He is armed with a bow carried in a separate case rather than in a combined bowcase and quiver, a light spear and a sword. He carries a small round shield.

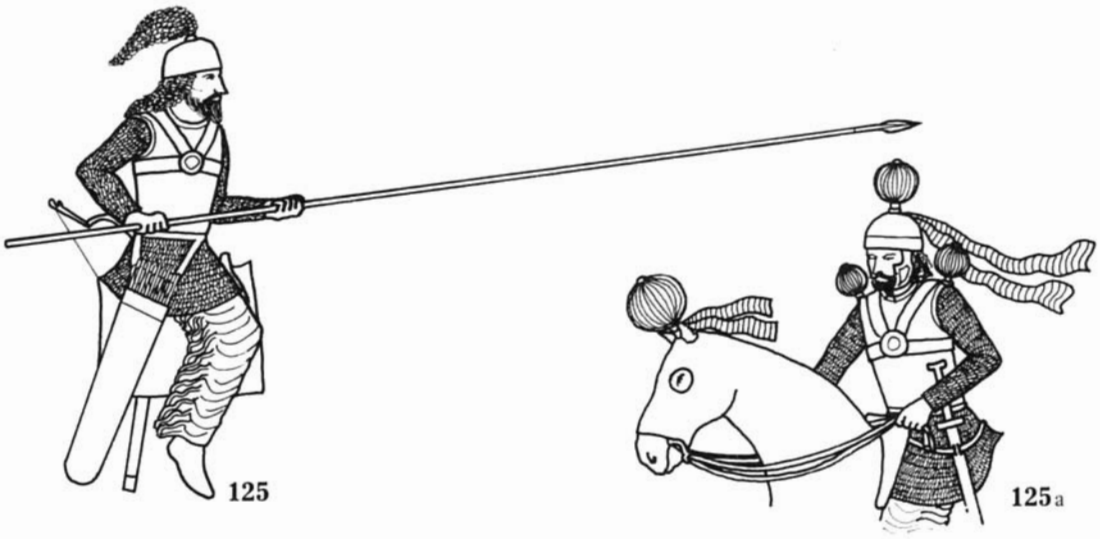
123 wears tunic and trousers with the usual bands of various colours. The rest of these garments is usually white, but sometimes dyed in a contrasting colour. His sleeved cloak and cap are either left a dark natural colour or dyed in some dark shade. 123a shows a variant on the usual dress with plain trousers, tunic split up the side, and bands up the split instead of one up the centre.

124. PALMYRAN CAMELMAN

This man is probably a professional caravan guard rather than a regular soldier. He sits astride his camel, armed with a bow, long straight sword and javelins, the latter often with barbed heads. He wears a bronze or iron scale corslet with leather shoulder reinforcements and pteruges. Generally similar armour with lamillae instead of scales is also depicted.

125 & 126. SASSANID PERSIAN CLIBANARII

125 is of an earlier period than the other clibanarius and is taken from the same monument as 83. He has a long sleeved mail coat supplemented by what may be a leather corslet, a surcoat or a defense of metal plates covered with fabric. A long straight sword and a bow case hang at his left and a quiver at his right. He has no shield and wields his 12 feet long Kontos with both hands. 125a shows how prominent men wore badges of rank. The long purple ribbons floating back from the helmet are the royal fillet, marking him as the king. The cloth balls at his helmet, shoulders and horse's head identify him as the 3rd century King Shapur, vanquisher of Valerian and victim of Odenathus. His horse is protected all round by a caparison of thick felt. Not every Sassanid knight of this period is shown on an armoured horse. Those that are have the felt dotted with rows of apparently metal badges, which in Shapur's case are a crescent over a circle, over a bar, and in the case of another figure, a disk over a bar. They are about 4 inches high. The resemblance to the tops of standards 128a and 128d are intriguing. The cut out for the horse's eyes is sometimes a rectangular slit right across the brow rather than separate holes.



126 is a later version. He wears a long robe beneath his mail, has a helmet with an attached mail hood with eye holes, has a small shield, and uses his Kontos overarm in one hand. The baggy trousers worn by by 129 are an alternative lower garment. His horse has metal armour for its head, neck and chest only. This figure is in fact that of the 7th century King Khusru II with his badges removed, but literary source show that such armour was almost certainly in use from the 4th century onwards. As well as the royal fillet, the king in this case had a small dome shaped crest on top of his helmet. Other types of helmet are known, including tall conical, the same with subsidiary points over the ears giving a three spire effect, and a type something between 131's cap and a modern forage cap. All have attached mail hoods. 126a and 126b may be helmets, but are more likely felt hats. 126a is the usual kind, 126b probably indicating that the wearer is a prominent noble called The Surenas.

127. SASSANID CATAPHRACT

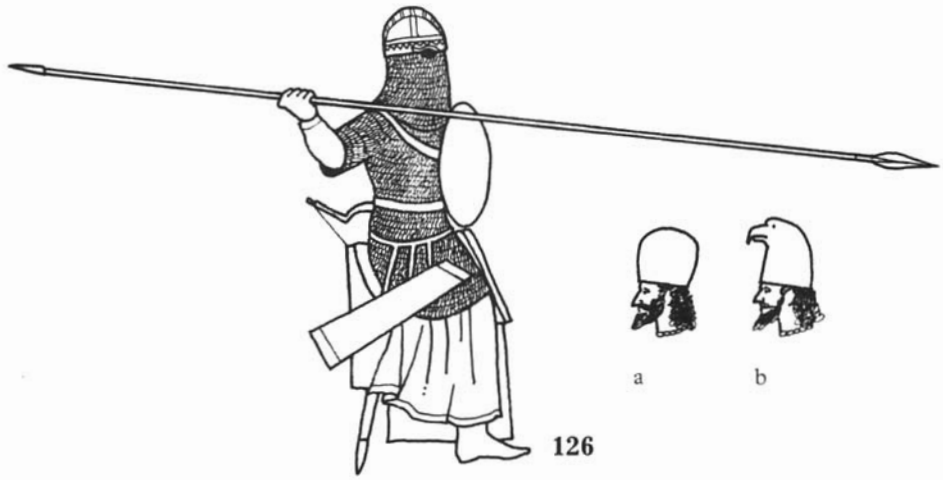
4th century Sassanid armies supported their clibanarii with more heavily armoured men on fully metal armoured horses. These did not have bows or shields, but relied entirely on the Kontos. They were normally stationed in the centre with the clibanarii on their wings. This man is clad entirely in mail. He wears a surcoat, short cloak and a helmet incorporating a face mask. It is quite likely that several other variations existed and that some individuals may have been more like 83 and 121.

This type of soldier does not seem to have been a complete success for the Sasssanids. The Emperor Julian taught his men to attack the Sassanids at a run instead of awaiting their charge, then to dive under the lances and try to hamstring the horses. Faced with this threat, the clibanarii would try to withdraw to use their bows, leaving the cataphracts isolated and handicapped by their poor vision. Certainly we do not hear of cataphracts such as these in the Byzantine wars.

128. SASSANID STANDARD BEARER

Since this is the first of the Sassanid types so far to expose much cloth, it is worth mentioning here that upper class Persians would be gorgeously dressed in rich colours and elaborate embroidered patterns. Red, yellow, violet and almond green were favourite, with blue, turquoise and leopard skin for cloaks and housings as runners up. The only shield pattern I know of is that of Khusru II, which had an eight pointed star with the shield rim and boss also differentiated. The Sha Nama of Firdausi credits the king with a gold shield.

The standard actually held by 128 is the most common shape seen on monuments, with variants on 128a and 128b, turning up occasionally as well. 128c is probably the famous national Kaviani banner, described by the



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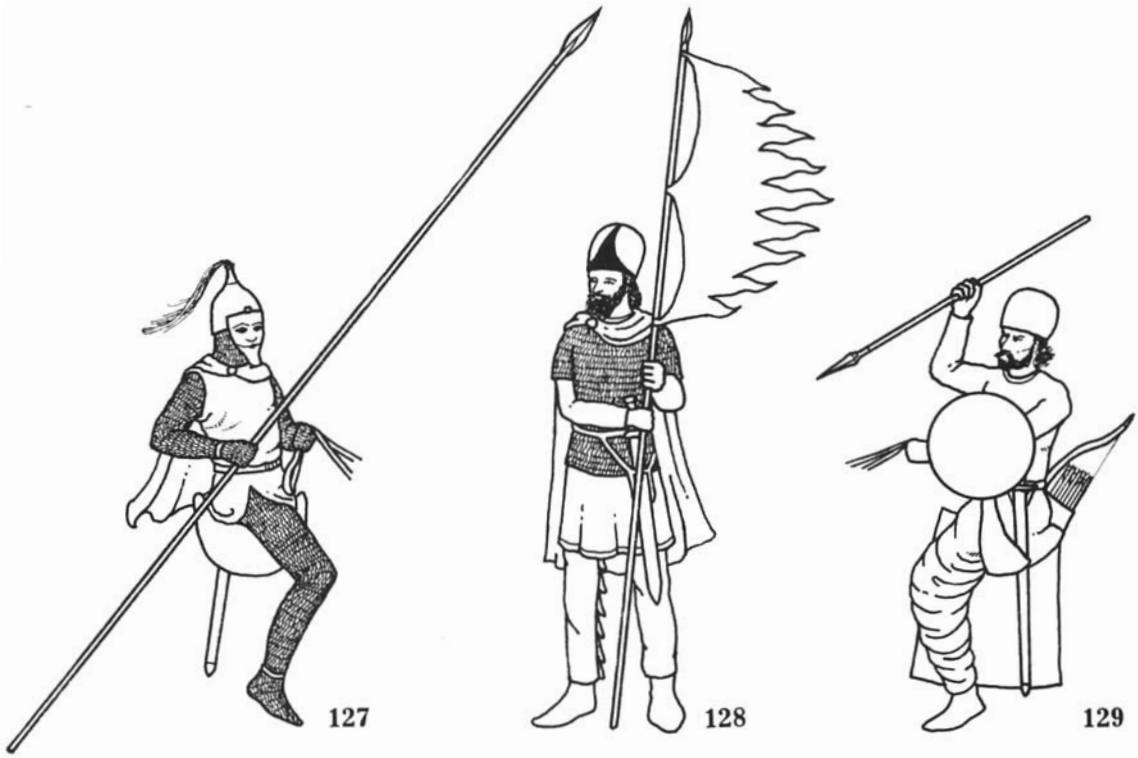
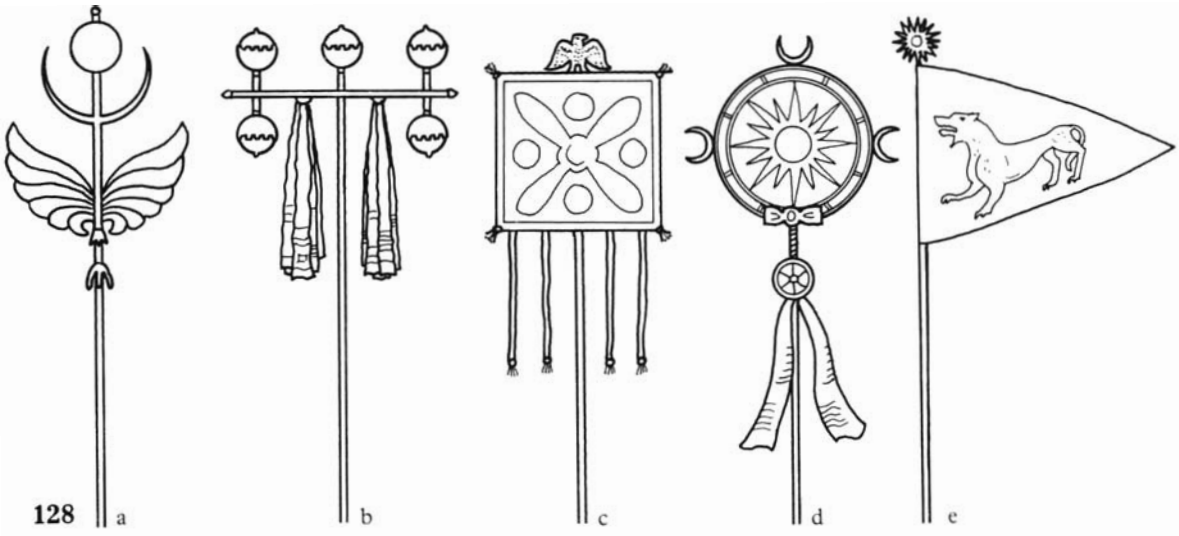


127 128 129

Sha Nama as a gold figure outlined with jewels on a ground of purple Greek brocade and with dangling ribands of red, yellow, and violet cloth. The figure in the centre is described as a star, but is probably a corruption of an earlier banner carrying the Hawk symbolising Ormuzd. Its head has become the top disk, its wings the top arms, its legs the lower arms, and its tail the lower disk. 128d appeared in the 2,500 year anniversary parade carried by a Parthian horse archer, but if it was used in that era it was probably the royal standard. It lasted into Sassanid times as a lesser standard. 128e is also from the parade. I won't go bail for the shape, but there are several references in the Sha Nama to banners of red, yellow or violet bearing such animals as white horses, dragons and wolves.



129. SASSANID LIGHT CAVALRY

These were provided by subject and allied tribes living mainly to the north east. This man wears a longish swept-back coat and very baggy trousers, possibly quilted. Likely colours include all the natural shades of wool, browns, red-browns, red, yellow and almond green. Elaborate patterns are unlikely. The hat is leather or felt. His beard is cut square and curled, his complexion medium, his hair dark brown, black, or in the case of one particular tribe, light brown or blonde.

He carries a relatively weak bow shooting short cane arrows, a long straight sword, and one or more light javelins with triangular section heads similar to that which killed the Emperor Julian.

130, 131 & 132. SASSANID INFANTRY

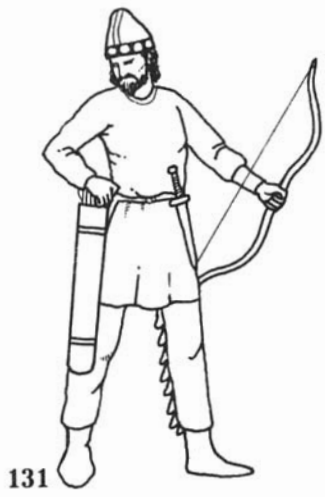
130 is one of the mass of spearmen conscripted without pay from their villages to come along and do the hard and dirty work of the camp. As Robert Graves put it in *Count Belisarius*, "You might just as well put flutes in their hands and call them snake charmers". The only time that they stayed till the end of a losing battle is when the general took the precaution of chaining them by the ankles. His clothing would mostly be in the various natural shades and grubby with it. His complexion would be darker than that of the upper classes. He carries a light spear, a knife, and has a cheap but effective shield made by pushing canes alternately from one side to the other of a rawhide sheet. This is known from monuments, literary accounts and a single surviving example from Doura.

131 and 132 are mercenaries and regarded as having a much higher status than 130. Such light infantry usually fought well. In field battles they often suffered because the Romans charged at a run to cut down their shooting time, but they excelled in sieges. Archers were more common that slingers. As usual, there would be plenty of minor variations in dress between individuals. Colours would probably have about the same range as for the light cavalry.

133. BLEMYE CAVALRYMAN

The Blemye were a sub-group of the Kushites of the Sudan who raided Roman Egypt from the 3rd century onwards.

130



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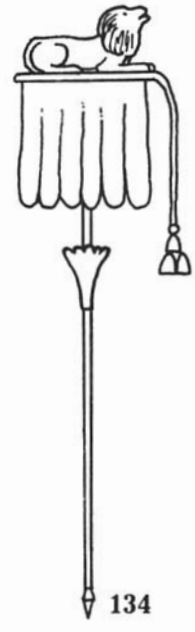

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This man is typical of their early cavalry. He rides with his thighs almost parallel to the ground, sitting much further back on the horse than normal. His tunic and trousers are white with patterned blue decoration at neck and cuffs. His armour is of copper or bronze scales with leather suspenders. His bronze or copper helmet is decorated with incised patterns, uses ram's horns as cheek pieces, and is topped by ostrich feather plumes. His saddle cloth is light blue. His skin is chocolate brown and his arm bands copper or gold. The visual effect of these colour combinations is extremely pleasing. Asses were often substituted for horses.

The weapons normally carried are javelins, mace and knife. A light hide shield with bronze boss supplemented the defensive armour.

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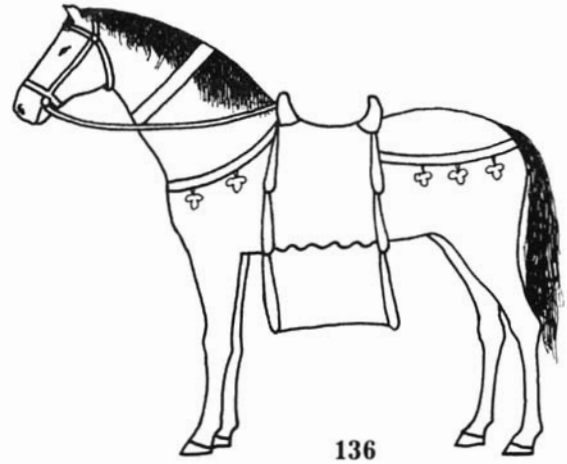

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133a is the head of a king. The apparent inverted jug that replaces the helmet has affinities with ancient Egypt, so was probably light blue in colour. The beard appears to be to be artificial and may also have been blue. The gold collar with dependent rectangle is a further badge of royalty. 133b shows the royal sword.

By the end of the 5th century, Blemye cavalry equipment had progressed considerably. Horses were now the only mount, some of them had partial copper or bronze armour, and the riders sat forward in more conventional style. The scale corslet was slightly longer, came up much further and had short sleeves. However, its square neck was still lower than usual, and the tunic was exposed both here and from half way down the upper arm. A bow was now carried in Byzantine style, but accompanied by javelins instead of Kontos. The shield was strapped to the upper arm. Byzantine riding boots were often worn, and the helmet too could be closer to the Byzantine shape, though retaining its ostrich plume. Armour was still entirely of bronze or copper, and colours stayed the same.

134. BLEMYE STANDARD

The golden lion of this standard is unusual in Sudanese art of the period, being more normally depicted biting the head off a bound prisoner! The hanging part is probably cloth, and the objects at the end of the crossbar extension seem to be bells.

135. BLEMYE ARCHER

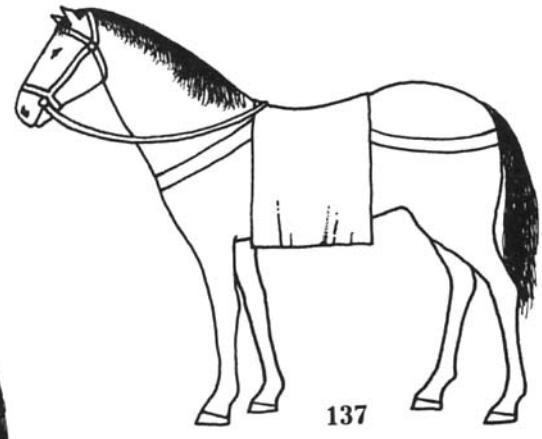
These formed the majority of the army. The dirty white short sleeved jacket crossed over in front rather like that of 82. Large copper ear rings were worn. The legs were bare. Very similar men manned the few Kushite war elephants, sitting astride their backs.

136. ROMAN CAVALRY HORSE OF THE 1ST AND 2ND CENTURIES A.D.

This is fairly representative of the harness used by those nations that had the saddle such as the Romans, Palmyrans, Sassanids and possibly the Gauls.

Roman saddles are depicted varying in colour between yellow-brown and red-brown, always with dark green saddle cloths. Other leatherwork is shown as maroon. Surviving bits are very similar to a modern snaffle and harness decorations are of silver plated bronze. The saddle has four hand grips or horns, one at each corner.

A horse's height is measured just in front of the saddle. The unit of measure is a hand of 4 inches. The skeletons of Roman cavalry mounts found at Newstead show that in life these were between 13.2 (54 inches or 1.37 metres) and 14 hands (56 inches or 1.42 metres). They were very similar to a modern Welsh Mountain Pony, with the same araby dished face and fine legs. Measurements from monuments confirm the size.



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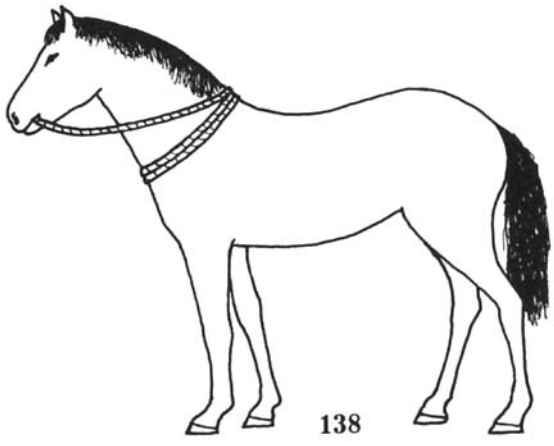

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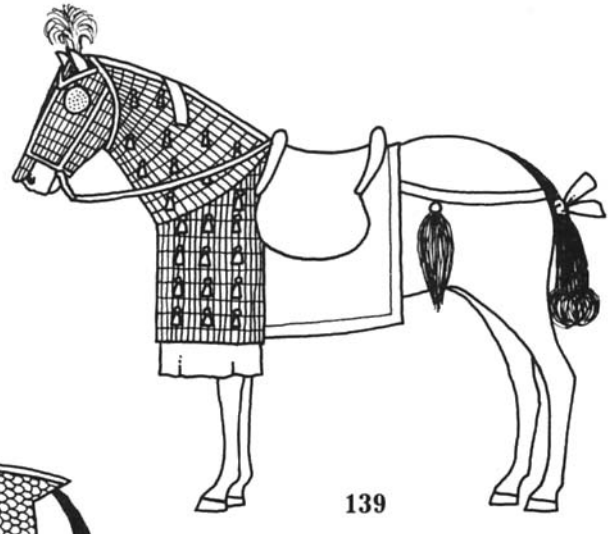

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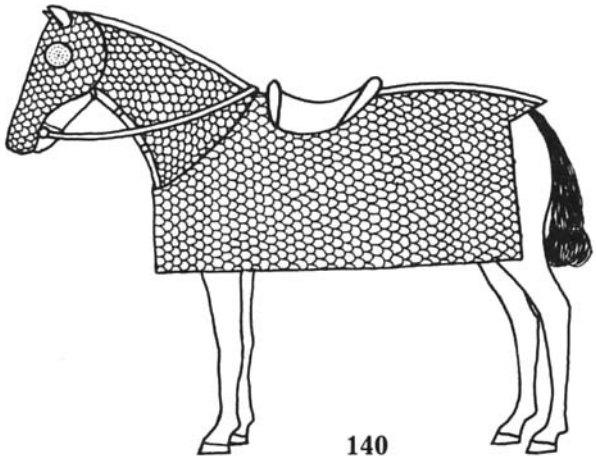

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137. CAVALRY HORSE WITH SADDLE CLOTH ONLY

The saddle cloth is attached by breast and crupper straps, making it hard to tell at first if there is a saddle or not. This sort of harness was used by Britons, Picts, Parthian horse archers, Germans and Dacians, among others. The size of the saddle cloth varies. Its chief function was to keep the horse's sweat from the rider's legs.

The animal shown is of similar type and size to those associated with chariot burials and which were also present at Newstead, probably being used for transport. The modern New Forest Pony has a very similar skeleton. The Newstead examples were between 11 and 12 hands.

138. MOORISH PONY

This animal has the simplest of all harness, a rope around the neck, and another noosed around the jaw to make a primitive bridle. Sometimes even the latter would be dispensed with, the rider guiding his mount by tapping its neck with the butt of a javelin. The weakness of this method is that the rider has no way to enforce his wishes. It might do well enough for skirmishing at a distance, but not for persuading a mount to charge into contact with a lot of noisy, nasty men waving sharp objects.

The animal shown is based on the modern Pagan breed of north west Africa. It is the same size as 137. This size is confirmed by measurements from monuments. The working ability of such small ponies should not be underestimated. During the Boer War, Basuto ponies thrived carrying loads of men and equipment approaching 300 pounds for long distances on low rations while big European chargers died at a staggering rate.

139. SASSANID HALF ARMOURED HORSE

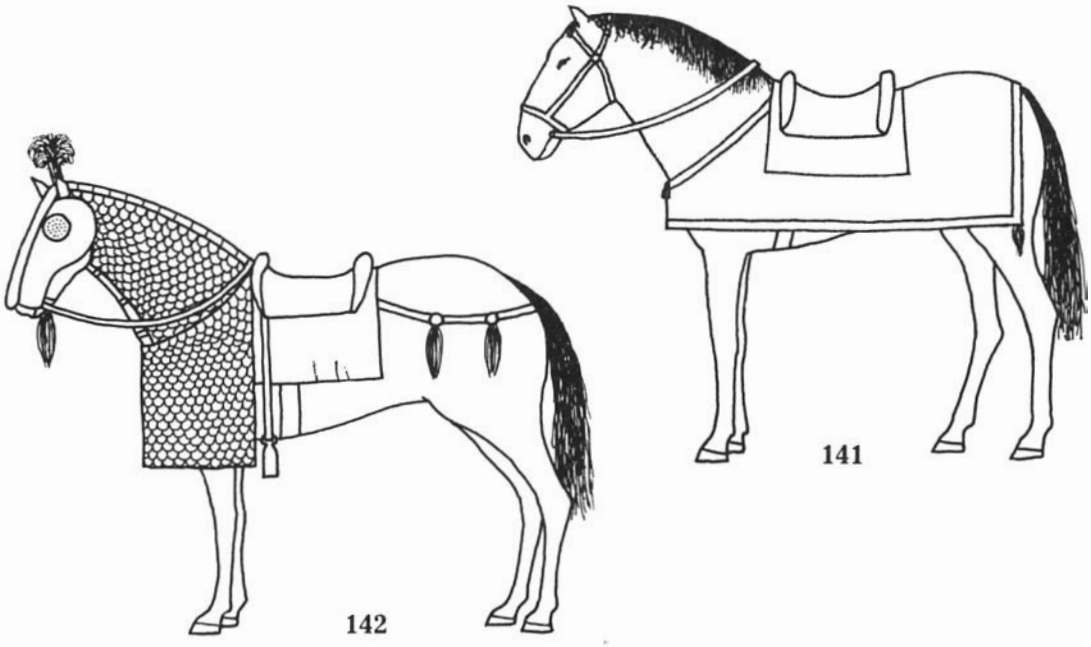
This is a fairly typical horse for a later clibanarius. It illustrates the fit of the free pieces of horse armour and the decorations that the Sassanids applied to their horses. The armour is of metal lamillae. The head piece could alternatively be a plate or leather chamfron, and the "tea strainer" eye protectors might be replaced with plain eye holes. The saddle is of distinctively Persian style. Later Persian paintings show saddles in a whole range of colours including gold, yellow, dark or light blue, red, almond green and white. Saddle cloths include white sheepskin, dark blue, almond green, dark green, red, leopardskin and yellow. Both are often intricately decorated in other colours or in gold. Decorations include a forehead plume, plumes hanging at the flanks to act as fly switches, a tail ribbon, and small tufts or tiny bells hanging from the armour. Unarmoured horses sometimes have other switches hanging from the breast band. The tail is tied up to reduce the chance of it providing a hand hold to an intending hamstringer. The felt armour of earlier clibanarii horses would be more like that of 140.

The animal shown is based on the modern Akal Teke Turkoman breed as the nearest existing relative. These average a little over 15 hands, sometimes going up to 16. Sassanid horses on monuments do not appear especially tall, but to be rather wider and deeper in the body than a modern Turkoman. The finest Turkomans have a unique almost metallic bronze colour.

140. FULLY ARMOURED CATAPHRACT HORSE

Two body pieces for this type of armour were found at Dura, one with bronze scales and the other with iron. One of these can be seen in the illustrations volume of the Cambridge Ancient History, placed over an Arab pony. It would fit a horse of between 15 and 15.3 hands. The headpiece is from another archaeological find in Scotland, which however was of thick leather reinforced with rows of brass studs. A similar one can be seen on the Pergamon reliefs in Berlin. The neck piece is from the Khusru II relief and the whole is confirmed by the Dura graffiti. The Dura armours are of overlapping metal scales sewn on to a textile backing, except for a leather strip replacing them along the spine. Late Roman poetry confirms that brass scales were more favoured than iron, possibly because of the latter being worse corroded by sweat.

Armour of this general shape could also be of greenish blue horn scales, red lacquered rawhide scales, or of thick felt. The first of these was favoured by the Sarmatians, the last by early Sassanids. Later Persian horse



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armour of medieval times is depicted as blue, red, white with leopard spots, light green and yellow as well as in metallic colours, and the same could presumably apply in this period. It is usually shown divided up as if by quilting, the dividing lines being gold, black or white.

The horse illustrated is based on the largest of the Newstead horses. This stood just over 15 hands and was very like a modern Welsh Cob, with fine head and legs and a strong body with deep broad chest. The Dura armour would have fitted him well.

141. ROMAN HEAVY CAVALRY HORSE OF THE LATE 4TH AND 5TH CENTURIES A.D.

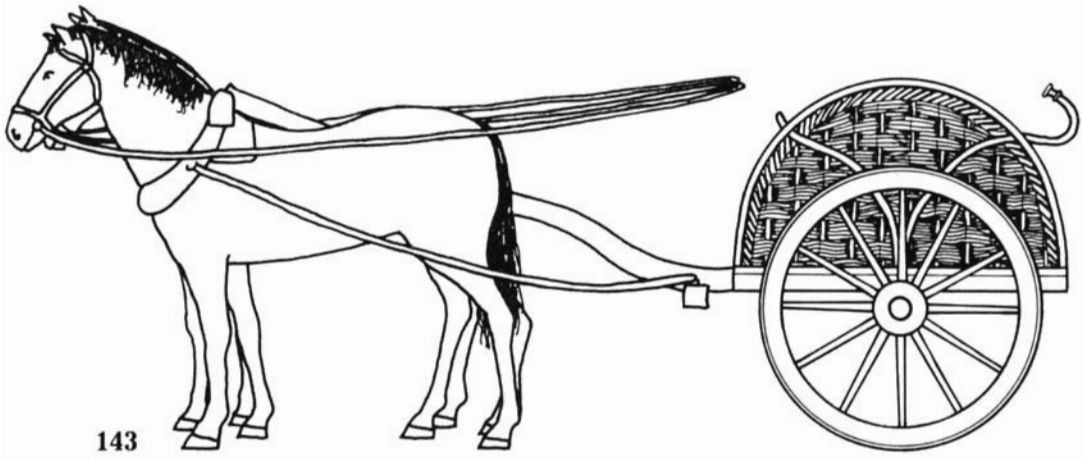
This equipment comes from surviving sketches by two separate artists of the destroyed Column of Theodosius. The caparison fastens in front of the horse's chest in much the same way as the body piece of 140. It may be intended only as decoration, or may be of felt and have some protective value against low velocity long range missiles. It is usually depicted as plain, sometimes as bordered, and for senior officers sometimes highly decorated, in one case with a pattern resembling scales. All the riders on such horses are dressed and equipped as 42 and 49. Not all horses are so equipped. There are many light cavalry on the same monument lacking the caparison. They are on horses like 136 but with saddle and saddlecloth more like 141.

The horse illustrated is a big strong animal of about 15 hands with a slightly Roman nose said to be indicative of Hunnic breeding, and probably typical of those ridden by the Goths as well. It may come as a surprise to learn that Huns did not always ride small ponies, but a late Roman veterinary book describes Hunnic horses as large, ugly, roman-nosed, but hardy and docile.

142. BYZANTINE HALF ARMOURED HORSE

The main difference between this and the other half armoured horse is the incorporation of stirrups. These were adopted from the Avars by the Byzantines sometime around 580 A.D. Other nations did not take them up till after our period.

Unarmoured Byzantine horses had an extra plume dangling from the breast strap on each side.



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143. BRITISH CHARIOT

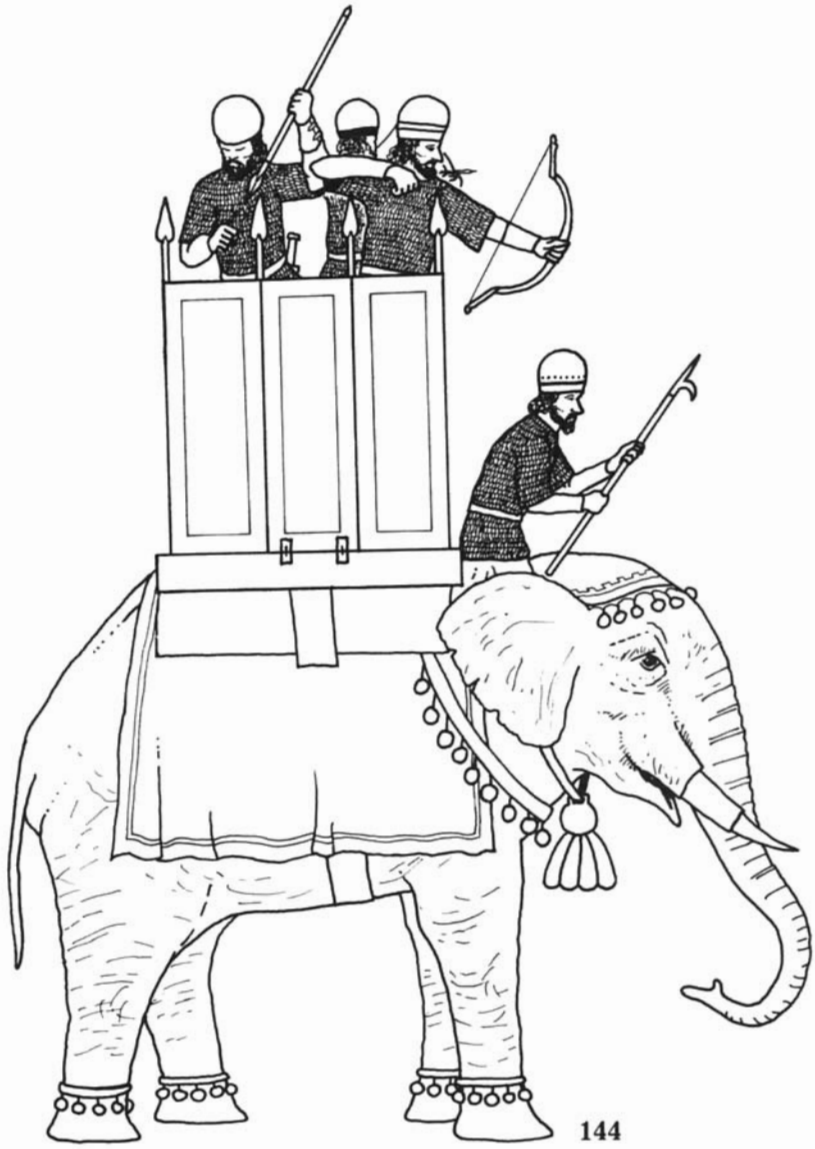
This drawing is based on a number of published reconstructions, the evidence for which is derived from coins, chariot burials, a gravestone from northern Italy and bronze buckets from Yugoslavia. Doubts have recently been cast on it on two grounds. One is that the Padua gravestone shows a double arched side. The other is that the chariot box is too narrow to accommodate the crew of two side by side, so that one must have been behind the other. I do not as yet accept this view as proven. Firstly, the earlier reconstructions also showed a twin arch frame, though with another arch joining them. This would have provided the same or better rigidity at less weight, being a more efficient structure. It is as likely that both methods were used as that the ancient representations of one or the other are wrong. Secondly, the Padua chariot shows the crew partially side by side and its box is no longer in relation to the wheels than the earlier reconstruction. Thirdly, the several Egyptian chariots from Tutankhamen's tomb have boxes as small, yet we know their crews fought side by side. Fourthly, we know from Caesar that chariot warriors often dismounted over the front of the chariot by running along the pole. They could hardly do this if they could not get past the driver. Fifthly, a man's weight completely behind the axle would leave the vehicle badly balanced, an important factor when driving as fast across hillsides as Caesar claims.

Another point of variance is whether the traces hooked directly on to the axle or on to a swingletree as I have shown them. Hooking them on the axle would give a shorter overall length, aiding the turn, but would have been less efficient and convenient. Archaeological evidence if anything favours the axle. The representations in art are non-commital.

It has also been suggested, only too often, that the harnessing of the ponies by a yoke and breaststraps would be hopelessly inefficient compared with horse collars and would greatly handicap performance and endurance. I must point out that the British army abandoned horse collars for its artillery draught teams in favour of a breast harness a very long time ago, and that the King's Troop can still be seen at displays towing a three ton load at the gallop! A well designed breast harness is not in fact much less efficient, and has the advantage over horse collars that the latter need to be individually fitted, thus hindering quick changes of teams.

The crew of such chariots, whether used by Britons, Picts or Irish, consists of an unarmed driver and a noble warrior primarily armed with javelins. In the case of the British, the driver would be much like 78 minus his weapons and shield, and the warrior like 73, 76 or 77.

Conventional wisdom is that Celtic chariots did not carry scythes on their wheel hubs, and archaeology tends to confirm this. However, I have found two Roman authors who assumed they did, so have a few lingering doubts on the subject. One such reference, to "the wode stained native of Thule driving his scythed chariot" appears in Silius Italicus' *Punica*, a work with some claim to be both the worst and longest latin poem. The other is in Frontinus' *Stratagems*, II, iii, 18, "In the same way Gaius Caesar met the scythed chariots of the



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Gauls with stakes driven in the ground". Frontinus had served in Britain, so I would have expected him to know better. There is an earlier reference to Galatians having a limited number of four horse scythed vehicles among their chariots during the Macedonian wars, but these were probably captured from the enemy.

Four horsed scythed chariots of the Persian style were occasionally produced in the field by Hellenistic armies. The only such battle in the period covered by this book was that of Orchomenus in 86 B.C. against Mithridates of Pontus.

Being essentially rich mens' toys, chariots were presumably brightly painted. The only evidence I can quote for actual colours is that for Cuchulain's chariot in Irish poetry, which was a red and white two-tone job. His team incidentally was one black pony and one grey.

144. SASSANID ELEPHANT

Most books state that, except in India, the war elephant went out with Hannibal and the Successors. This is far from true. The small African forest elephant continued to be used by the Moorish kingdoms of northern Africa until Rome insisted they stop, and the Kushites of the Sudan used the same breed with a driver and a pair of archers sitting astride. On one occasion, an attempt was made to train circus elephants to take part in a Roman civil war, but the scheme was hurriedly dropped after a disastrous first parade when the elephants' panic left the unit behind them looking rather untidy.

A much more important and sustained use was by the Sassanid Persians. Judging by Ammianus Marcellinus accounts of battles against them, their effect was more moral than physical but was real enough. They frightened horses even more than men, and this was only partly compensated by the elephants themselves being less than ideally brave.

The example shown is based on a much later Persian painting, but shows the style of decoration likely to be in vogue. The tower is yellow, the pad beneath it and the elephant's head piece are dark green, and the hanging cloth red. The red ankle straps, the blue throat strap and the head piece are all fringed with small bells, while a larger one hangs under the throat to help frighten horses. Bells, tusk tips and tower pinnacles are all brass.

It may seem odd that a nation of archers should not have given their elephants some sort of light armour, if only non-metallic, but the killing of several with darts by the Ioviani and Herculiani during Julian's campaign tends to confirm this. A number of suits of elephant armour are known from India at a much later date, but even so, it seems that the great majority of elephants probably did without.

This elephant is of the Indian species. In British India, an elephant had to be at least 8 feeet high at the shoulder to qualify as first class and could be up to 10 feet. Very few African forest elephants exceed 7½ feet and they can be as little as 6. The African bush elephant, which was **not** used in war, could be as tall as 12 feet.

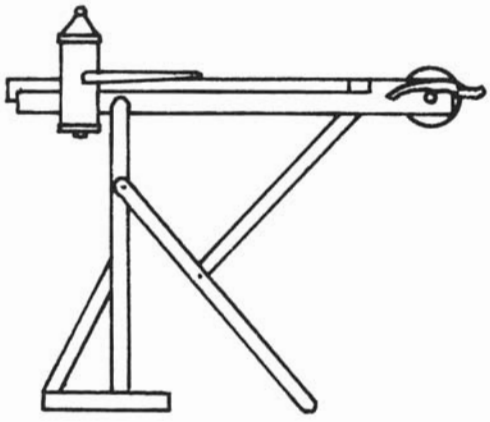
145. ONE CUBIT BALLISTA

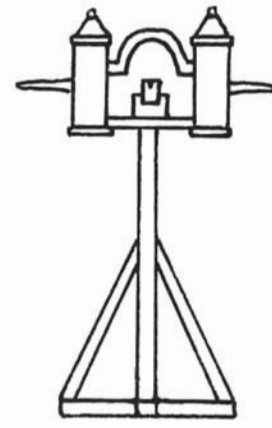
This shows the standard Roman bolt-shooting engine that replaced the types illustrated in *Armies of the Macedonian and Punic Wars* during the 1st century A.D. This reconstruction has been produced by scaling from the many illustrations on Trajan's Column. A slightly different reconstruction can be found in Marsden's *Greek and Roman Artillery*. The main improvements were the housing of the sinew spring coils in bronze cylinders giving protection from weather and damage, and the substitution of iron for wood in the cross frame supporting the cylinders. This made the machine much lighter. It could now be man-handled about as easily as a modern 81mm mortar, but was frequently mounted in and fired from a mule cart. Larger machines were sometimes used from fortifications, and parts of two for shooting 2 cubic bolts were found in late Roman forts on the Danube. These are of a cheaper though heavier construction with wood replacing iron in some parts of the frame.

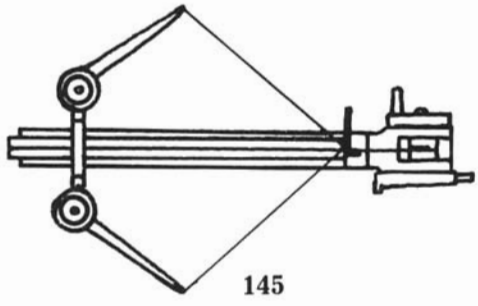
There is some doubt as to whether a one cubit ballista would need to be cocked by windlass. It may instead have been cocked by leaning into a curved bar on the end of the stock and pulling the string back with both hands like the earlier Gastrophetes or "belly bow". However, I am doubtful if the strongest men could keep this up for long. Even the larger medieval crossbows, with much smaller missiles, were worked with a windlass.

Many one cubit bolts were found in the Dura excavations. They are made of ash and are slightly oval in section with three wooden fins set at 90°, the fourth being missing to avoid fouling in the launching groove. The heads attached were identical to the quadrangular type from Maiden Castle, suggesting strongly that this size of machine was already in use in 43 A.D. The other types of projectiles from Maiden Castle previously identified as bolts are probably conventional javelin heads.

Contemporary accounts and modern reconstructions suggest a range of about 180 paces against individuals and about 480 paces against groups. The shooting rate for a crew of two using a windlass would be about two shots per minute.







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Lastly, the Roman name of Carroballista is not a reference to carriage by a mule cart, but a transliteration of the Greek Cheirobalistra "Hand shooter". A true translation would be Manuballista, and this is actually the term used by Vegetius.

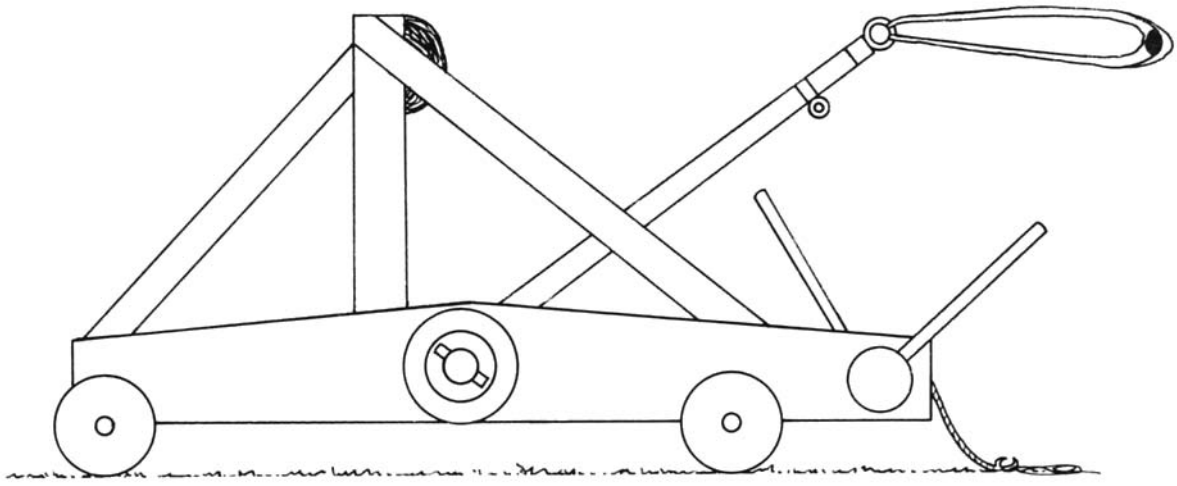
146. 10 MINA ONAGER

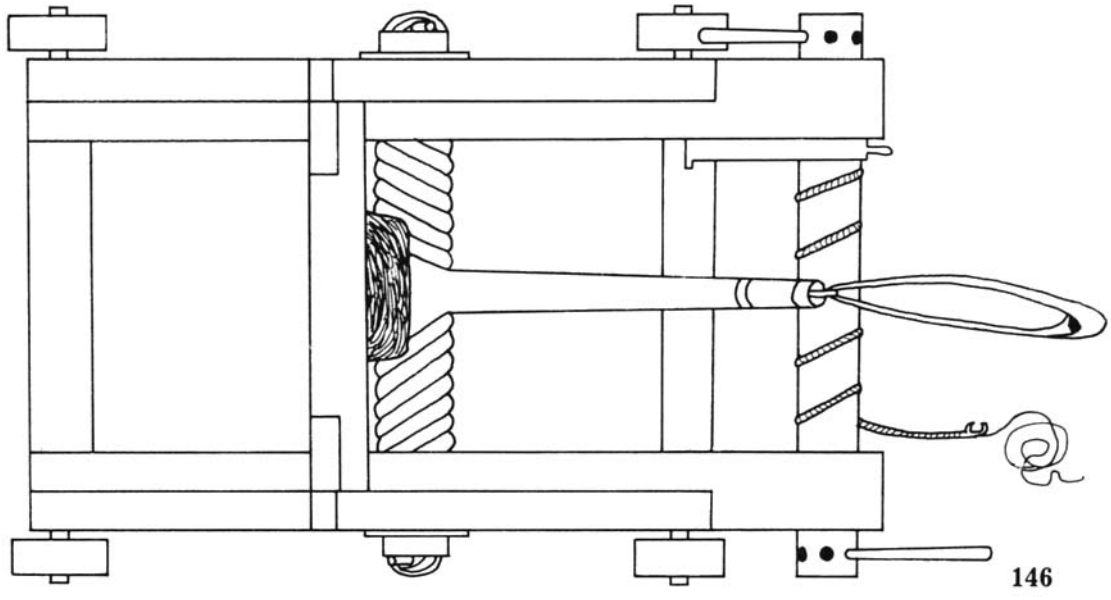
The Onager replaced the earlier two-armed stone thrower at some time between 250 and 350 A.D. Its first appearance is in Ammianus' account of the Persian wars of Constantius II, and the last known two-armed stone-thrower was found fallen from and buried by a collapsed tower of the city of Hatra, destroyed by the Persians in the middle of the 3rd century. This drawing is based on the best performing modern reconstruction, that of Sir Ralph Payne Galwey.

A 10 mina machine, throwing a spherical stone missile of about 10 pound weight, would be useful against palisades, ships and other engines, but would be altogether too light for battering stone fortifications. A 30 mina engine was even better against other artillery, effective against siege towers and could destroy stone parapets.

For real breaching effect, a one talent engine throwing 61 pound balls, or better still, a three talent engine was required. A one talent engine would be exactly twice the dimensions of the 10 mina engine drawn.

The maximum range of any of these sizes would be about the same as that of the bolt-shooter, but its accuracy much less. Even the largest engines had to be brought to within 180 paces for breaching, so as to give a flat trajectory hitting consistently inside a small area. As their crews would then be highly vulnerable to enemy bolt-shooters, let alone long range archery, other artillery would have to be employed for counterbattery cover.





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Stone-throwers needed much larger crews than bolt-shooters and were correspondingly slower shooting. The shooting rate might be one a minute for a 10 mina, one in five minutes for a 30 mina, and one in ten minutes for a one talent. The stone balls had to be cut accurately to shape by a craftsman, but if the target was not stone, you could use an irregular stone baked in a clay ball. This broke on landing and could not be returned. Big stone-throwers were rarely used in field battles, but when one was, as at Cremona in 69 A.D., it could do terrible damage to densely packed troops.

Stone-throwers were moved by oxen, slowly, and in the cases of the bigger machines, often partially or completely disassembled.

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