Roman Shields

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ILLUSTRATED BY GIUSEPPE RAVA

Elite • 234

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Series editors Martin Windrow & Nick Reynolds

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INTRODUCTION

One of the best-known pieces of Roman military equipment was the shield (*scutum*), nowadays almost invariably identified with the curved, rectangular legionary shield. The use of the shield was intrinsic to the Roman style of fighting, whether on foot or in the saddle. Indeed, the reaction of soldiers caught by surprise without their shields is interesting and seems to have been instinctive, as Caesar comments: 'The rest gather together and, terrified by the sudden danger, wrap their left arms in their cloaks, draw their swords, and thus defend themselves from the light infantry and cavalry, trusting in the proximity of their camp, and retire to it, defended by the cohorts posted at the gates' (Caesar, *Civil War* 1.75.3). Similarly, Tacitus writes that 'The Romans, awakened by wounds, looked for their weapons and rushed through the streets of the camp, a few in military attire, but most with their garments wrapped round their arms, and with drawn swords' (Tacitus, *Hist.* 5.22). Practical tests confirm that a heavy woollen cloak wrapped around an arm could indeed stop a sword cut and reduce blunt force trauma to just bruising (David Sim, pers. comm.). This was a purely defensive measure, however, and a Roman shield used correctly was far more than this: with the right training, it could become a serious offensive weapon in hand-to-hand combat.

The Latin word *scutum* was in fact applied to any type of shield, legionary or auxiliary, flat or curved. It could, however, be further qualified and refined with the addition of an adjective. Thus a flat shield was a *scutum planatum* (the epithet for a curved one has not, unfortunately, survived). Surprisingly, given that the curved legionary shield was so ubiquitous under the Republic and Principate, that last term – perhaps it was something like *scutum curvum*, *curvatum* or *arcuatum* – is not encountered in the literary or sub-literary sources. In addition, some specific types of shield had their own terms, such as *clipeus* for the large, round 'Argive' shield or *parma* (and its diminutive form, *parmula*) for smaller, round shields. Varro, whose *Lingua Latina* was a catalogue of (mostly spurious) derivations for Latin words, noted that '*scutum* comes from *sectura* (cutting), as though *secutum*, because it is made of wood cut into small pieces' (*Ling. Lat.* 15.215), which is interesting in light of the way in which legionary shields were built up of three layers of thin strips of wood glued together (see below, p. 8), but may indicate that the 'definition' was in fact an assumption based upon what was known of the method of manufacture.

It should nevertheless be acknowledged, if not condoned, that many modern writers are referring to the curved shield when they use the term *scutum*, just as they refer to the Roman short sword as the *gladius* (Bishop 2016: 6).

There have been a few published studies of the Roman shield and its development (Fiebiger 1921; Eichberg 1987; Nabbefeld 2008; Travis & Travis 2014), but there is much that is still unknown, as is so often true of commonplace organic objects that were a familiar aspect of everyday life in the ancient world and mostly escaped comment.

There were a number of common components across all Roman shields. The largest was the shield board itself, invariably made of wood. The shield board was often reinforced with wooden stringers or metal bars to add rigidity. Integrated with these strengtheners would be a hand grip, on most shields positioned horizontally. Over the hand grip was a metal boss (*umbo*), while the edge of the shield was protected by binding strips of either metal or rawhide. The binding not only served to protect the shield from damage from blows to the rim or from placing it on the ground, but also served to reinforce the shield board and help maintain its integrity, even when damaged. There might also be decorative elements attached to the front face of the shield board and some means of attaching a suspension strap fitted to the rear.

According to tradition, Rome acquired an early shield (the original *ancile*, which would symbolically protect the settlement) when it fluttered down from heaven (Ovid, *Fasti* 359–92). The second king of Rome, Numa Pompilius (r. 715–673 BC), had 11 copies made for safety and these 12 *ancilia* (which were each shaped like the body of a violin) became sacred objects borne by the Salii, the priests of Mars Gradivus. However, the earliest known type of shield to be used for combat by the Romans and their neighbours on the Italian peninsula was the circular Greek hoplite-type shield, sometimes known in Greek as the *hoplon* or *aspis* (the latter is generally preferred but the former can still be found in the literature) and in Latin as the *clipeus*. Dionysius of Halicarnassus (*Ineditum Vaticanum* 3) described how the Romans adopted the round shield when confronted by the Etruscans.

The *aspis* was a wooden shield, sometimes with a copper-alloy outer casing, up to 1mm in thickness, slightly domed in the centre and with a broad, flat rim. Ironically, one of the few examples to survive (and the most complete so far from the Greco-Roman world) comes from Bomarzo (Italy) and is now in the Museo Gregoriano Etrusco in Vatican City. It is important to note that it was not a Roman shield – it came from an Etruscan tomb belonging to one Vel Urinates (whose sarcophagus is now in the British Museum in London) – but it provides some insight into what an early Roman shield might have looked like.

The left arm of the user passed through a loop in the centre and the hand then gripped a cord near the periphery. The form of the hand grip dictated the way in which the shield was held, obviously, but it also influenced the way the shield was used in combat. This type of grip dictated a largely defensive role for the shield.

Later Roman writers like Livy, who composed his history of Rome during the reign of the Emperor Augustus (r. 27 BC–AD 14), may have portrayed the change from the *clipeus* to the *scutum* as a neat transition (Livy 8.8), but modern scholarship can point to iconographic evidence showing round

A representation from Arles (France) of the honorific shield (*clipeus virtutis*) presented to the Emperor Augustus by the Senate, modelled on the circular hoplite-type shield. (Siren-Com/Wikimedia/ CC BY-SA 3.0)

and rectangular shields in use at the same time (Armstrong 2016: 207 n.115), possibly by different troop types (and thus social classes under the Servian system).

The form of the circular hoplite-type shield survived in Roman culture long after it ceased to be used in battle as the honorific shield (*clipeus virtutis*). Augustus was presented with one of these in 26 BC, a complete marble representation of which (with an inscription) survives from Arles (France), as well as another fragment from Augustus' Mausoleum in Rome. It was also depicted on coins, such as an *aureus* of 19 BC. While the Arles shield has a detailed inscription, some coins just show CL V for *clipeus virtutis* and others add SPQR (*senatus populusque Romanus*: 'the Senate and people of Rome'). The *clipeus* was also used to mark significant events, Scene LXXVIII of the frieze on Trajan's Column in Rome featuring the goddess Victoria dedicating such a shield to the Emperor Trajan (r. AD 98–117) in the interval between the two Dacian Wars (AD 101–102; AD 105–106). Rome's connection with the first shield its armies supposedly used under the Kings was thus maintained well into the Principate.

One of the hallmarks of all Roman military equipment is that development was steady and continuous, matching the way in which the armies evolved to meet new challenges. During the 4th century BC, if the literary sources are to be believed, the armies – and their shields – began to change.

A

THE VATICAN SHIELD

Virtually nothing is known about the earliest Roman equipment, but it is assumed that the Romans followed the Etruscans in using the circular hoplite-type shield (Greek, *aspis*; Latin, *clipeus*). The most complete example to survive from the ancient world, excavated from Bomarzo, some 70km from Rome itself, and often known as the Vatican Shield, reveals the details of construction of such shields and provides an indication of what an early Roman shield may have looked like. It is around 1m in diameter with a 10cm rim and estimates of its original weight vary between just under 7kg to around 9kg. Made of poplar wood planks, glued edge-to-edge and turned on a lathe, it had a thin covering of copper-alloy sheet and was held by means of a central armband (Greek, *porpax*), with the left hand gripping a strap or metal handle (*antilabe*) that ran around the interior of the slightly domed shield board. This was primarily a defensive shield and the means of holding it was one of its principal limitations. Whether or not blazons were employed is unknown. The speculative device used here is taken from early, heavy bronze currency (*aes grave*) from Rome.

Note how although the shield was large enough to cover the space between the shoulder and the knee, the method of carriage would mean that it would inevitably be held higher than a comparable shield with a central, horizontal hand grip. Greaves probably protected the warrior's lower legs, since the method of carriage and the size of the shield would have left the lower legs vulnerable and they were found elsewhere in Italy at that time. A metal muscled cuirass presumably protected the thorax and a helmet – here a simple Attic type – would almost certainly have been worn.

The curved, oval shield from Kasr el-Harit (Egypt). (Photo © Raffaele D'Amato)

LEGIONARY SHIELDS

Republican

Dionysius of Halicarnassus (*Ineditum Vaticanum* 3) stated that it was the Samnite Wars (343–290 BC) that saw the adoption of the oblong or oval shield by the Romans. Its form – oblong with a central vertical spine (*spina*) up the front face equipped with a 'barleycorn' boss over the horizontal hand grip – certainly suggests that it was heavily influenced by Celtic shields, presumably from contact in the north of the Italian peninsula. This is indeed the overall form of the flat, plank-built shields found in excavations at La Tène (Switzerland) and Hjortspring (Denmark) and depicted on the statue of a Gallic warrior from Mondragon (France), but the design was modified considerably in Italy. It may have been the Romans who applied a form of plywood to the construction, as well as giving the shield board a subtle curve (the two were inevitably connected: see below, p. 22). The resulting form undoubtedly came to dictate the way it was used, as shield forms always did. The way in which it wrapped itself around its user in such an intimate manner, compared to its flat antecedent, may even have encouraged its use offensively.

The earliest dated depictions of the curved legionary shield are those shown on two Republican propaganda monuments: the Aemilius Paullus monument at Delphi (Greece) and the so-called Altar of Domitius Ahenobarbus, the latter originally thought to be from Rome. The depictions can be compared with a contemporary description by the Greek historian Polybios, an eyewitness to their use in action. Lastly, the recovery of a complete shield at Kasr el-Harit in the Fayum (Egypt) matches both the depictions and the description to supply a comprehensive indication of what the legionary shield of the period looked like, how it was constructed and also how it was used in battle.

The Aemilius Paullus monument was constructed to commemorate the defeat of the Macedonians under King Perseus of Macedon (r. 179–168 BC) at the battle of Pydna (168 BC), over a century after Dionysius' suggested date for the introduction of the *scutum*. Roman legionaries are shown on a frieze running around all four sides of the monument in battle, wielding large, curved, oval shields equipped with a horizontal hand grip. These shields evidently reached from ankle to shoulder on the legionaries carrying

B

THE KASR EL-HARIT SHIELD

This is a reconstruction of the Roman Republican shield based upon the find from Kasr el-Harit (Egypt). In many ways it resembled Celtic shields, in terms of its size, and by having both a horizontal hand grip and a 'barleycorn' boss. It was constructed from three layers of wooden laths around 60–100mm wide. The wood from which the shield was constructed was identified microscopically as most likely birch, which was not native to Egypt, and thus probably imported. The outer and inner layers of laths were arranged horizontally, while the middle layer was aligned vertically. The shield board was tapered in thickness from the centre to the edges (where it was less than 10mm), a feature that will have helped keep the weight down (modern reconstructions vary between 8.5kg and 10kg). The whole shield board was covered with a layer of felted wool (erroneously identified as leather by the excavators): one piece spanned the front face and a second was then attached to the rear and around the edges, overlapping the front layer by some 50–60mm. This covering was held in place by twine sewn through the shield board but protected on the front face by additional, doubled-over lengths of felt, the upper part of which was glued in place over the stitching.

Although Polybios described the Roman shield as having iron edging and a boss, the shield from Kasr el-Harit had neither of these when discovered, nor did there appear to have been any provision for such additions. It is possible that varying traditions saw shields finished in different ways according to the region of their manufacture.

Details from the frieze on the Aemilius Paullus monument at Delphi (Greece) showing legionaries wielding the large, curved, oval legionary shield of the Republican period. (Photo © J.C.N. Coulston)

them and were visually distinct from the circular, slightly domed Macedonian shields. There is no indication of any sort of blazon or decoration on the Roman shield boards, not least because most are shown from the inside, but there is little doubt that the frieze would originally have been painted and that such details might have been added in this manner; were this the case, however, it is strange that the Macedonian shields are depicted with sculpted representations of their characteristic blazon, while the Roman shields appear plain.

This same type of shield then appears in even more detail on the relief from the so-called Altar of Domitius Ahenobarbus, also known as the census relief, now held in the Louvre in Paris. Generally dated to the end of the 2nd century BC (albeit on stylistic, rather than historical, grounds), it is the second-oldest depiction of the Roman *scutum*. The shields shown here were clearly a similar size to those on the Aemilius Paullus monument (reaching from ankle to shoulder), but since they are shown from the front, there are unobstructed views of the spine running up the centre of the front face and the 'barleycorn' boss in the centre. Again, as with the earlier monument, the shields have a horizontal hand grip.

Polybios, son of Lykortas, was a 2nd-century BC cavalry officer from the Greek city of Megalopolis who was taken hostage by the Romans and came to be a trusted companion of that same Aemilius Paullus. As such, he became familiar with Roman arms and armour and their method of warfare. In his description of the Roman Army, he provided an account of large shields of the type shown on the two monuments when discussing the *hastati* (the first line of heavy infantry in battle) of a legion:

> The Roman panoply consists firstly of a shield, the convex face of which measures two and a half feet [0.74m] in width and four feet [1.184m] in length, and a palm's thickness at the rim. It is made of two planks glued together, the outer surface being then covered first with canvas and then with calf-skin. Its upper and lower rims are strengthened by an iron edging which protects it from downward blows and from damage when rested on the ground. It also has an iron boss fixed to it which deflects the most formidable blows of stones, spears, and heavy missiles in general. (Polybios, *Histories* 6.23.1–4)

He adds that a legion's second and third lines of heavy infantrymen in battle, the *principes* and *triarii*, were armed in the same manner, with the exception that the *triarii* had spears rather than javelins (*pila*). So far as it goes, it is a reasonably accurate description of what can be seen on the two monuments. Polybios also indicated that the large shields offered both physical and psychological protection and contributed to the effectiveness of Roman troops: 'Their weapons also give the men both protection and confidence due to the size of the shield and the sword being strong enough to endure repeated blows. They are thus formidable antagonists and very difficult to overcome' (Polybios, *Histories* 15.15.8). The description of the shields used differs in some important respects from the only completely surviving Republican example, however, the artefact in question being the Kasr el-Harit shield. Excavated by British papyrologists at the end of the 19th century (Grenfell and Hunt 1900: 58, Pl.IXa), it was not published in more detail until World War II (Kimmig 1940). It was thought to have belonged to a Celtic mercenary serving

Detail from the relief on the so-called Altar of Domitius Ahenobarbus depicting the large, curved, oval legionary shield. (Jastrow/Wikimedia/ Public Domain)

within the Hellenistic kingdom of Egypt. However, its similarity in both form and size to the shields shown on the aforementioned monuments and described by Polybios led Peter Connolly to be one of the first to identify it as a possible example of a Roman Republican legionary shield. The use of a form of plywood, mirrored by the later curved, rectangular shield from Dura-Europos (Syria) (see p. 22), renders its identification as Roman highly likely.

The Kasr el-Harit shield board measured 1.28m long and 0.65m wide, and was thus close to the dimensions provided by Polybios. Its length would provide 76 per cent coverage for a man 1.68m tall. By analogy with the later Dura-Europos shield (see p. 21), the published width of the curved shield board is in fact more likely to be the chord (the shortest distance between the vertical edges) than the length of the arc of the shield board.

There was a wooden boss (slightly recessed) and a vertical spine like that shown on the Domitius Ahenobarbus monument. This whole central feature of boss and spine was made in three pieces, with the spine sewn through the shield. The boss itself was one massive piece of wood, shaped on the

outside and hollowed out on the inside, leaving a thickness of 6mm. It is unclear from the published description whether there was originally a metal boss attached over the wooden one. There does not appear to have been any provision for metal edge binding for the shield board. Some iron rings that survived on the inside face of the shield board were probably connected with the use of a suspension strap (see p. 5).

The triple-thickness plywood would have been extremely strong in both the vertical and horizontal planes (something plank-built shields lacked) because the wood grain ran in two directions, perpendicular to each other, and it was consequently difficult to split such a shield with a blow to the rim. Tests with modern replicas of Roman javelins (Sim & Bishop 2017: 62) show that this type of construction was also much more resistant to penetration of the face of the shield board by a point, such as a javelin or an arrowhead (see p. 44).

This type of shield was not only used on land. The Romans viewed marines as, essentially, regular land troops who just happened to fight at sea. Consequently, there was little difference in equipment between them and land-based soldiers. A relief from Palestrina (Italy), often said to depict the battle of Actium (31 BC), but possibly a heavily classicized piece from the Arch of Claudius in the Campus Martius in Rome, shows a Roman warship manned by marines with curved, oval shields of the same type as the Kasr el-Harit shield (see p. 1).

Caesar is the first to mention, in an almost offhand way, that shields were protected by leather covers. Describing the rapidity with which combat with the Nervii (a Belgic tribe of northern Gaul) began in 57 BC, he noted: 'The time was so short, the mood of the enemy so ready for conflict, that there was no space to attach *insignia* or even to put on helmets and remove covers (*tegimenta*) from shields' (Caesar, *Gallic War* 2.21). At the time of writing, however, no actual examples of such early covers have been found. It can only be assumed that they resembled surviving later examples from sites dating to the Principate.

The evidence for the 2nd century BC is far superior to that available from the latter part of the Republic. Although it is often claimed that important changes to the shape and size of the shield board came with the advent of the Principate, it is sobering to recall that such innovations – along with the adoption of segmental body armour – could very well have been introduced during the Late Republic, yet there is currently no evidence either to confirm or to gainsay this.

C **SHIELD COVERS**

Caesarian legionaries preparing for battle by removing their leather shield and helmet covers (*tegimenta*) and rolling them up for stowage. Caesar's famous account of an action against the Nervii in 57 BC mentions that it was unusual in that it started so rapidly that his troops did not have enough time to do this, which implies that it was part of the normal careful preparation for combat. Some men can be seen with their helmets and shields still covered, while others are in the process of removing the covers, and the most eager have readied themselves and are waiting for action.

The variety of shields depicted here is to some extent speculative. A standard-bearer (*signifer*) has a small, round *parma*, with a cover similar to one found at Castleford (England), and both full-size and truncated oval legionary *scuta* are present. Surviving covers from the era of the Principate included openwork appliqué patches naming the legion to which the bearer of the shield belonged, so it would not be unreasonable for them to have been used on earlier covers. Although the Augustan period is often thought of as one of great innovation in equipment, it is possible that changes were already under way among the legions of the Late Republican period, which were reduced in number and consolidated by Augustus (inevitably leading to unusual mixtures of equipment).


LEGX

Detail of the top of a tombstone from Aquileia (Italy) depicting the military equipment (including a curved, oval shield) of a member of the Praetorian Guard. (Photo © J.C.N. Coulston)

Early Principate

The curved, oval shield appears to have continued into the Principate with at least one body of troops. The praetorian cohorts, although raised under Augustus, were not actually united in Rome until his successor, the Emperor Tiberius (r. AD 14–37), built the Castra Praetoria barracks. Before that, they were based around Italy, and the tombstone of C. Firmidius of *cohors VI Praetoria* from Aquileia depicts his Montefortino helmet, sword, dagger, javelin and curved, oval shield in the upper register of the stone.

Just as infantry swords became smaller under Augustus (Bishop 2016: 12), so did shields. The two facts are not necessarily connected, but they are indicative of new thinking about Roman arms and armour. Although the curved sides, spine and 'barleycorn' boss of the legionary shield were retained, the top and bottom were now truncated to make a much shorter shield board. This is the form of shield shown on the Triumphal Arch of Orange (France) and on a monument now in the Louvre, possibly from the Arch of Claudius, that is thought to depict praetorians, but which shows them with curved, oval shields. The same shields are depicted on Cancelleria Relief A in the Museo Gregoriano Profano in Vatican City, which dates from the last quarter of the 1st century AD and is also from Rome.

Frieze depicting captured weapons on the Triumphal Arch of Orange (France), including flat, oval shields with spines and 'barleycorn' bosses. (John S. Lander/LightRocket via Getty Images)

The first dated depiction of a true rectangular legionary shield appears on the decorative frieze around the tomb of L. Munatius Plancus in Gaeta (Italy), who died *c.*15 BC. Coins of the Emperor Gaius, more

A detail from Cancelleria Relief A showing two men (centre and right) with curved, oval shields and one (left) with a small, circular one. From a cast in the Museo della Civiltà Romana, EUR, Rome. (Rabax63/ Wikimedia/CC BY-SA 4.0)

ABOVE
Shields depicted on a decorative frieze around the Augustan-era tomb of L. Munatius Plancus in Gaeta (Italy) including (above) a flat (hexagonal?) and (below) a curved, rectangular shield with a spine. (Photos © J.C.N. Coulston)

FAR LEFT
Tombstone of legionary C. Valerius Crispus from Wiesbaden (Germany), probably dating to the Chattan War (c.AD 83) with a curved, rectangular shield and a figural boss depicting the head of a lion. (© Hartmann Linge, Wikimedia Commons, CC-by-sa 3.0)

LEFT
A copper-alloy figural boss depicting a lion head similar to that on C. Valerius Crispus' shield. Unprovenanced, in a private collection.
(Photo P. Gross © Arachne)



ABOVE LEFT AND CENTRE
Tombstones of legionaries (left) P. Flavoleius Cordus from Mainz (pre-AD 43) showing him wearing an oval shield on his back and (right) C. Castricius Victor from Aquincum (Budapest, Hungary), who has a curved, oval shield with a figural boss depicting a gorgon. (Photos © M.C. Bishop)

ABOVE RIGHT
Tombstone of the *aquilifer* Cn. Musius from Mainz with a curved, oval shield. (Carole Raddato/Wikimedia/ CC BY-SA 2.0)

familiarly known as Caligula (r. AD 37–41), possibly issued in AD 37 as part of his accession donative, show Gaius addressing the men from the praetorian cohorts, and these men hold the familiar curved, rectangular *scutum*. It is worth noting that it has been suggested that a Nilotic mosaic from Palestrina (Italy) shows soldiers with rectangular (but not very curved) shields, but this is by no means securely dated compared to the coins (it has even been suggested as 2nd century BC) so is best treated with caution (Meyboom 2015: 19).

The classic image of the rectangular legionary shield is in many ways that shown on the tombstone of C. Valerius Crispus from Wiesbaden (Germany). A legionary of *legio VIII Augusta*, he probably died during the Chattan War (*c*.AD 83) conducted by the Emperor Domitian (r. AD 81–96) against the Chatti in the Taunus mountains, not far from Wiesbaden. His shield has a figural boss depicting the head of a lion.

The curved, rectangular shield was by no means universally adopted by legionaries, however. The tombstone of P. Flavoleius Cordus from Mainz (Germany), a soldier of *legio XIIII Gemina* who died before his unit went to Britain in AD 43, is depicted carrying a curved, oval shield on his back (possibly using its carrying strap). It is considerably smaller than the earlier Republican examples. The same is true of the *aquilifer* Cn. Musius, bearing the legion's eagle standard; he has a similarly sized curved, oval shield, but with a rectangular boss plate. Even in the Flavian era, in the last quarter of the 1st century AD, there are examples of tombstones depicting oval shields. The tombstone of C. Castricius Victor of *legio II Adiutrix* at the legionary base of Aquincum (Budapest, Hungary) has just such a curved, oval shield, which is adorned with a rather fine figural boss, probably depicting a Gorgon.

There are no complete or near-complete shields surviving from this period, but there are many excavated shield accessories, most prominently fragments of brass binding. Some of these, with rounded right-angled

corners, as well as a proportion of the straight sections, may have come from curved, rectangular legionary shields. There are also some bosses known, both in copper alloy (almost invariably brass) and iron, now in the form of a rectangular base plate with a domed boss. A few fragments of plywood shield board have been found, including examples from Masada (Israel). In each case, sufficient evidence survives to suggest that the later, intact shield board from Dura-Europos (see p. 22) had changed little from its predecessors.

In many ways, the most informative shield components to be found are some leather covers found in the midden (known as the *Schutthügel*) immediately outside the legionary fortress of Vindonissa beneath the modern village of Windisch (Switzerland). These covers, just like those mentioned by Caesar (see p. 12), were designed to protect shield boards and their accessories when they were not actually being used in combat. In form, they were made up of panels of tanned goat hide stitched together in such a way that they would completely cover the front face of a shield and overlap around the edges of the shield board. Examination of such a cover from Caerleon (Wales) shows that they were doubled over and tacked all the way round to form a hem through which a drawstring was passed, enabling them to be secured around the shield (Driel-Murray 1988: 52).

Relief in the Louvre, probably from the Arch of Claudius in the Campus Martius in Rome, usually identified as praetorians with truncated oval shields, even though there are no scorpion images (the standard praetorian identifier) displayed on any of their equipment. (Christophe Jacquand/ Wikimedia/CC BY-SA 4.0)

The function of these covers may have been to protect shields, but if not properly maintained, they could absorb moisture – a vulnerability which may lie behind Dio's catalogue of misfortunes (including torrential rain) which befell Varus' army in the Teutoburg Forest in AD 9: 'For they could not successfully handle their bows or javelins, nor, for that matter, their shields, which were completely soaked' (Cassius Dio 56.21.3). Although this passage has been interpreted as referring to the shields themselves, it has already been noted that covers were only removed for battle, so on the march, they would naturally have been attached to shields.

It is by no means clear that, by the end of the 1st century AD and the accession of Trajan, one universal form of curved legionary shield had been adopted. Indeed, the available evidence suggests a wide degree of variety among citizen troops, whether legionaries or praetorians. This heterogeneous reality, however, was soon to be masked by a remarkable development in Roman monumental sculpture.

High Principate

The helical frieze that adorns the exterior of Trajan's Column fastidiously depicts citizen troops as equipped with one type of shield (curved, rectangular), and auxiliaries (and, indeed, barbarians) with another (oval). There is little reason to doubt that this, just like the types of body armour employed, was an artistic device to allow the differentiation of the different troop types at the sort of distance at which the frieze was intended to be viewed. Shields were also most likely reduced in size in proportion to the human figure (a typical curved, rectangular legionary shield being only 37 per cent of the height of a citizen soldier standing guard in Scene XIII) in much the same way that helmets were made smaller so that more of the human face was visible than was the case in reality. No single monument depicts as many Roman shields as Trajan's Column, and there are variations in both the range of blazons and size of shield boards depicted. These have been pored over by generations of scholars, eager to associate particular legions with certain devices, but probably to no avail (see p. 54), not least because these could all be due to the whim of the sculptors.

The depictions on the helical frieze on Trajan's Column cannot be considered without at the same time studying the cruder, but arguably more accurate, reliefs on the metopes surrounding the Tropaeum Traiani monument at Adamclisi (Romania). Here there are true curved, rectangular legionary shields, but there are also curved-sided, truncated shields of the earlier type. By comparison with Trajan's Column, a comparable citizen soldier standing guard on a metope from Adamclisi now in the Ìstanbul Arkeoloji Müzeleri is depicted with a curved, rectangular shield 56 per cent of his height. Interestingly, there are two principal types of legionary shield depicted on the metopes at Adamclisi: those borne by unarmoured men on the march, depicted from the side and with straight sides, and those belonging to men in combat or on guard (like the citizen soldier on the metope in Istanbul), with shields with curved sides.

Dating to the mid-2nd century AD, this relief from Croy Hill (Scotland) on the Antonine Wall depicts three legionaries with curved, rectangular shields. (Photo © M.C. Bishop)

By the time the Antonine Wall was in use in northern Britain, in the middle of the 2nd century AD, the curved, rectangular shield was well established and is depicted on a relief from Croy Hill (Scotland), along with the characteristic boss with a curved, rectangular base plate matching the proportions of the shield itself. The same form of shield appears on a battle scene between Romans and Parthians decorating a cavalry battle helmet found in a burial at Nawa (Syria). The date of the Nawa find is uncertain, but conflict between the Romans occurred under Trajan and again under the joint rule of the emperors Marcus Aurelius

(r. AD 161–180) and Lucius Verus (r. AD 161–169). The depiction of bearded Romans on another helmet might be thought to indicate a later date, since beards have often been held to be fashionable with the Roman Army from the Hadrianic period onwards, but the fact is that many of the soldiers depicted on Trajan's Column itself are unshaven. The last occasions upon which curved, rectangular shields are shown in Roman monumental sculpture are the triumphal arches of the Emperor Septimius Severus (r. AD 193–211) in Rome and Leptis (or Lepcis) Magna (Libya), both of which feature the *testudo* formation (see p. 49) and probably date to AD 203.

The Column of Marcus Aurelius in Rome is of less practical help in understanding the development of legionary shields, since it so clearly apes Trajan's Column, although the shields are shown as even smaller. It might perhaps be reasonable to deduce that curved, rectangular *scuta* were still in use among the legions at this time, but even that may be pushing the evidence too far, given that Roman iconography – particularly metropolitan sculpture – was prone to archaizing tendencies.

Once again, no intact shield boards survive from this period, but there are a number of sets of fittings, such as U-sectioned, copper-alloy binding strips from the edge of shields, as well as bosses in both copper alloy and iron. Significant among these is a brass boss from the River Tyne at South Shields (England), thought to have been lost in a Roman shipwreck. Measuring 300mm by 260mm, this brass boss plate has a curved, rectangular base and a hemispherical dome to cover the hand. It is elaborately decorated with one of the four seasons in each corner, with a figure of Mars above the boss, as well as an eagle brandishing an olive branch on the dome itself, flanked by standards. There is also a bull in the lower portion of the boss and this is readily identifiable as the emblem of *legio VIII Augusta*, also named in the inscription. A tin wash was selectively applied to the front face, masked off to pick out the figures in the underlying brass. The base plate carries an ownership inscription of Junius Dubitatus of that legion, a detachment of which is thought to have been brought to Britain under Hadrian.

ABOVE LEFT
The brass boss belonging to Junius Dubitatus from the River Tyne at South Shields (England) where it may have been lost in a shipwreck. (Photo © Trustees of the British Museum. All rights reserved)

ABOVE RIGHT
An undecorated copper-alloy boss from a curved, rectangular shield. Unprovenanced, in a private collection. (Photo P. Gross © Arachne)

Late Principate

Legionary shields remained varied during the 3rd century AD. Tombstones of *legio II Parthica* found at Apamea (Syria) show the soldiers with oval *scuta* and with no sign of the classic curved, rectangular shields. These clearly had different proportions to auxiliary shields of the Early Principate (see p. 28) and they closely resembled actual finds of contemporary shield boards from Dura-Europos (see p. 29). The Arch of Septimius Severus in Rome also gives a prominent role to oval shields, although where interior views are provided, it is clear that an anachronistic hoplite-type grip is depicted, so the value of this monument as a source for reliable depictions of shields must also be open to question. More evidence for oval legionary shields comes from a copper-alloy disc, now in France but originally found in Italy, which depicts a vexillation of legionaries from the British legions *II Augusta* and *XX Valeria Victrix*. The object is stylistically datable to the 3rd century AD, a date reinforced by the name of the owner, Aurelius Cervianus.

The curved, rectangular shield had not been discarded, however. Cassius Dio, describing the *testudo* formation (see p. 49) when he was writing sometime after AD 229, notes: 'The heavy-armed troops who use the hollow (κοίλαις) and pipe-shaped (σωληνοειδέσι) shields are drawn up around the outside in a rectangular formation and, facing outward and holding their arms at the ready, they surround the others' (Cassius Dio 49.30.1). Moreover, a tombstone of this era from the legionary base at Nicopolis, near Alexandria (Egypt), now in the British Museum, depicts two views of a legionary called Ares, one in civilian garb, and one with his military equipment, including his curved, rectangular shield, helmet and sword. Similarly, a sculpted panel from Alba Iulia (Romania) also shows an armoured figure with this type of shield. It can be identified as a soldier of the later 2nd or 3rd century AD from the sword scabbard worn on the left hip.

BELOW LEFT
The tombstone of Flavius Tryphon of *legio II Parthica* from Apamea (Syria) showing his oval shield, with its cruciform incised blazon. (Photo © M.C. Bishop)

BELOW RIGHT
The tombstone of the legionary Ares from Nicopolis, near Alexandria (Egypt), with stacked equipment including a curved, rectangular shield. (Photo © M.C. Bishop)

ABOVE LEFT
The fragments of the Dura-Europos curved, rectangular shield from Tower 19 before conservation. (Yale University Art Gallery Dura-Europos Collection)

ABOVE RIGHT
The Dura-Europos curved, rectangular shield after conservation. (Yale University Art Gallery Dura-Europos Collection/Public Domain)

A near-complete example of this traditional form of shield was found in Tower 19 at Dura-Europos (James 2004: 182–83), along with fragments of others. Dura-Europos was a Hellenistic city on the west bank of the Euphrates River, which was taken over first by the Palmyrenes, and subsequently by the Romans, who placed a garrison in a military compound at the north end of the city. Dura-Europos was ultimately besieged and depopulated by the Sassanid Persians (*c.*AD 253), and it is this attack that occasioned the deposition of most of the military equipment recovered from the site.

In its surviving, heavily restored, form (largely to favour its painted front face over its structure), the Dura-Europos shield is now somewhat distorted from its original shape. Compared to the Kasr el-Harit shield, its height would provide only 63 per cent coverage for a man 1.68m high. The curved shield board has a chord measuring 0.66m, which in turn permits the calculation of depth for the shield curvature (sagitta) of 0.23m. In fact, although such shields are often referred to as 'semi-cylindrical', the cross-section was not a true semicircle of 180°, but rather a segment of a circle with a diameter of 0.7m and an arc of approximately 140°.

The shield board itself had a circular aperture 120mm in diameter cut into its centre after assembly and a horizontal wooden strengthener (*c.*20mm wide and 2.5–3mm thick), broadened into a grip across the aperture, attached. Two more horizontal wooden strengtheners of similar dimensions were added near the top and bottom of the shield, as well as vertical ones

near the shield edges and above and below the aperture. The shield board was then covered first with a fine woven textile and then a layer of skin or parchment as a facing which was dyed red and subsequently painted. When excavated, the shield was found without its boss, although four nail holes were originally present, one in each corner of a rectangular base plate that was probably in the region of 250mm high and 170mm wide. The edges of the shield were bound in strips of rawhide sewn through the shield board. Flexible and malleable when wet, rawhide is extremely tough when dry and has the added virtue of shrinking as it dries, aiding the structural integrity of the shield board in much the same way that iron and brass had done in earlier periods. Modern reconstructions of the Dura-Europos shield vary between 5.5kg and 7.5kg, depending upon the degree of thickening in the centre of the shield board.

At first, it was the decoration of the shield that attracted most attention from scholars. Painted red overall on the front face, a central field around where the base plate of the boss would have been mounted was defined by a series of brightly coloured, concentric rectangular borders. The corners of this dominant central motif were finished off with decorative finials with a wave-like 'running dog' pattern in between them. Above the central decorative field, winged victories flank an eagle clutching a wreath in its beak, while below it two large stars formed from dots are located on either side of a lion, which has its head turned to confront the viewer. While the eagle and victories are standard fare in Roman military iconography, the lion is interesting because it could conceivably be the totemic animal of the legion to which the shield belonged (the emblem of *legio XVI Flavia Firma* – which was based at Samosata in the north of the province of Syria and fought in the region under Trajan and subsequently – is thought to have been a lion). Of course, it is always possible that it was not in fact a legionary shield (see p. 39).

The curved, rectangular shield from Tower 19 at Dura-Europos was not the only example found at the site, although none of the others were anywhere near as complete. A second curved, rectangular shield came from Tower 2 (the 'Tower of the Archers'), surviving up to 0.93m high and 0.62m wide and with only two layers laid at right angles to each other (James 2004: 183–84). A third specimen consists of either the top left or bottom right corner of such a shield, still retaining all three layers of wooden laths. Attached to the rear face of this fragmentary shield board with small trenails are thin reinforcing strips like those originally recorded on the more complete shield. The shield board, which has holes around

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THE DURA-EUROPOS SHIELDS

Shields found at Dura-Europos included examples of both curved, rectangular and flat, oval shield boards. As excavated, the curved, rectangular shield board was 1.06m high and 0.86m wide. Like the Kasr el-Harit shield, it was constructed from three layers of wooden laths, the outer two once again laid horizontally, while the inner one was sandwiched between them and set vertically. The wood used was plane which, unlike that of the earlier Kasr el-Harit shield, was available in the region. As with the earlier plywood shield, the thickness was tapered from the centre to the edges. The resulting shield board was 5–6mm thick. Although now too distorted to tell, there is some suggestion from surviving rectangular bosses that the shield board was also slightly curved from top to bottom, not just side to side.

The oval shield boards were constructed from between 12 and 15 planks, varying in width between 40mm and 100mm. These tapered from between 7mm and 12mm near the centre of the shield board to between 3mm and 5mm at the rim. Overall dimensions ranged between 1.15m and 1.18m in height and 0.94m and 0.97m in width. In the centre of each shield board there were two apertures, one above the other, the top one semicircular, the lower one either semicircular or trapezoidal. The uncut section between these openings formed the handle and would have been reinforced with a metal wraparound grip riveted to either side. Some of the shield boards had been fitted with bosses, removed before they were deposited.


E. Rava '20

Two views of a classic modern curved, rectangular shield reconstruction belonging to the Ermine Street Guard and closely based on the Dura-Europos (Syria) example. Note how the effect of a wide-angle lens and parallax can make it appear as if both the top and bottom are curved.
(Photos © M.C. Bishop)

its two original edges where the rawhide edging would have been sewn on, was covered with something fibrous. Then, over that, a thin layer of what was originally assumed to be gesso (see p. 43) was applied which was then painted red. Although any details of design have not survived, there are indications that a similar rectangular field surrounded the boss to that found on the other shield. Finally, one other fragment of one of these triple-thickness plywood shields was recovered near Tower 19, painted dark red and measuring around 120mm square (James 2004: 184).

Although one curved, rectangular shield at Dura-Europos might be thought to be an antique or relic of past wars, the fact that up to four were recovered from around the defences of the city, and all seemingly dating to the 3rd century AD, may well indicate that this shield form continued in use with at least some units of the Roman Army.

Dominate

By the 4th century AD, oval and even round shields reigned supreme among the Roman legions. Examples of the form were depicted on a number of media, some more plausible than others. The Arch of Constantine in Rome, which was largely made up of sculpture repurposed from other, earlier monuments, nevertheless contained some contemporary reliefs depicting combat and showing Roman soldiers with oval shields. Comparable in some ways, but probably more accurate, is the exquisite Stilicho diptych in Monza (Italy), which seems to depict a foreshortened oval shield (although a true circle cannot be ruled out, given the perspective) with a conical boss and decorated across the surface of the shield board with a scale pattern. There is, however, a distinct problem in detecting the change from the oval shields of the Late Principate to the round shields of the Dominate that is, quite literally, a matter of perspective: it is sometimes difficult to tell whether what was being depicted was intended as oval shields viewed from the front, or round shields viewed at an angle.

Surviving medieval and Renaissance manuscripts of the *Notitia Dignitatum*, a late-4th- to early 5th-century AD document recording senior civilian and military posts across the later Roman Empire, incorporate illustrations based on the original ancient document. These include circular blazons for all of the legions (and other units) recorded within it (see p. 55).

The hunt mosaic from the Villa Romana del Casale at Piazza Armerina in Sicily (Italy) shows a number of instances of the use of shields during big-game hunts. None of the men depicted using them is wearing armour, but it is clear that soldiers were represented from the broad, red belts they are wearing. The shields employed are universally of the oval or round type. One man is seen spearing a lioness with the long shank of what appears to be a javelin as the animal grapples with his red-painted shield. Elsewhere, two men standing close together provide a front and rear view of this type of shield. The rear face is painted red and has a horizontal grip while that in the frontal view is quartered into (clockwise from the top) red, white, blue and yellow. It also features a wild-boar blazon in black in the lowest quadrant that is not unlike the lion on the Dura-Europos curved, rectangular shield or those depicted in the *Notitia Dignitatum* manuscripts. The use of shields in hunting is covered in more detail below (p. 58).

No complete examples of Late Roman shields have survived from within the empire but there are a number of items from Egypt now held by

Detail of a frieze on the Arch of Constantine in Rome depicting circular shields in use. (C.M. Dixon/Print Collector/Getty Images)

ABOVE LEFT
Detail of the Missorium of Theodosius, a late-4th century AD ceremonial dish, showing troops with oval shields. (Werner Forman/ Universal Images Group/ Getty Images)

ABOVE RIGHT
Plank-built circular shield from the lake at Thorsberg in Schleswig-Holstein (Germany). (Einsamer Schütze/Wikimedia/ CC BY-SA 3.0)

the University of Trier (Germany) that have been identified as fragments of shield boards and painted facings (Junkelmann 1996: 115–24). One of these fragmentary shields was 1.03m in diameter and constructed from 45mm-wide planks with stitching holes around the edge, probably indicative of the attachment of rawhide binding. Another (depicting a hunting scene) was 1.08mm and had similar stitching holes near its edge. A third shield was the most complete and measured 0.98m in diameter and was constructed of 55mm-wide planks. Its decoration showed a combat scene set in a North African context depicting skirmishes between what are presumably native tribesmen (equipped with, among other things, smaller, circular shields) and troops with larger, oval shields, but no helmets or body armour. One scene depicts a full-figure soldier beneath the boss, who is resting on an oval shield with a lion blazon under its boss, again recalling the Dura-Europos shield.

Additionally, a number of shield boards from watery deposits beyond the northern fringes of the empire (often inaccurately called 'bog' deposits) should be included here. Considerable quantities of Roman military equipment were retrieved from the former lake at Thorsberg in Schleswig-Holstein (Germany), as well as six examples of circular, plank-built shield boards, some of them with a copper-alloy boss still *in situ* (Nabbefeld 2008: Nos 410–16). These shields ranged in diameter from 0.65m to 1.04m and some retained traces of copper-alloy binding around the edge. Although these examples may not be Roman as such, they are clearly closely related to plank-built shields from the period of the Dominate and demonstrate how – as was the case throughout the history of the Roman Army – the technology of their opponents repeatedly influenced that of both the legions and their auxiliaries.

There is an element of irony in the fact that Roman legionary shields had evolved from the plank-built, metal-skinned *clipeus* of the Regal period, through the curved plywood and flat, plank-built oval shields of the

Republic and Principate, only to return to a circular shield of similar dimensions and construction to its predecessor more than half a millennium earlier. The one major innovation that was retained was the central, horizontal hand grip, derived from Iron Age European, rather than classical Greek, models.

Early Principate copy of a Republican relief from the Lacus Curtius in the Forum Romanorum in Rome depicting a Roman cavalryman with a *parma*. (Photo © M.C. Bishop)

Smaller legionary shields

The large, curved body shields described above were not the only type of shield to be found among the legions. In the Republican period, skirmishing troops known as *velites* were equipped differently from their heavier brethren, with only a helmet and no body armour. For defence, they had the *parma*: 'The youngest soldiers or *velites* are ordered to carry a sword, javelins, and a *parma*. The *parma* is strongly made and sufficiently large to afford protection, being circular and measuring three feet [0.89m] in diameter' (Polybios, *Histories* 6.22.1–2). This is confirmed by Livy (38.21.14), which is unsurprising, because he used Polybios as a source, but he adds the interesting detail that these light troops fought with the sword then transferred any javelins they still held to their right hand, presumably holding them behind the shield. One of the Mainz pedestal reliefs shows a later skirmisher, an auxiliary infantryman (or possibly even a legionary *lanciarius*), doing something similar, as he brandishes one javelin in his right hand and carries three more behind his shield. The *parma* was also the shield carried by Republican cavalry (Livy 2.20.10) and it is depicted on a relief that marked the Lacus Curtius in the Forum Romanorum in Rome. This allegedly commemorated the spot where Marcus Curtius saved Rome by riding his horse into a cleft that had opened in the ground. The surviving relief is a later copy of a Republican-era original.

Under the Principate, even smaller shields seem to have been used by some standard-bearers and musicians. These are depicted in a number of scenes (XLVIII, LI, LIII and LXI for example) on Trajan's Column. A marble relief from Pozzuoli (Italy), probably re-used from a Domitianic monument (and now in the Pergamonmuseum in Berlin), shows a Roman soldier with a small, round shield clutched under his left arm. Unusually, he is holding a spear, so his identity is uncertain, although one of the other shields depicted bears a praetorian scorpion and he may have been intended to represent a *strator* or *beneficiarius* (soldiers with special duties). A similar small shield is tucked under the arm of a soldier on Cancelleria Relief A and decorated with a scale effect on its face. Meanwhile, for musicians, a tombstone from the legionary fortress at Aquincum depicts a *cornicen* (musician) with a small shield. No examples of the shields themselves have been identified, but two segments of leather cover from Castleford were recognized as belonging to circular shields and measured 0.61m in diameter. These suggested a shield board of around 0.5m, once allowance had been made for the edges being folded over and secured with a drawstring (Driel-Murray & Haas 1989).

Standard-bearers depicted on Trajan's Column with circular shields. From a cast in the Museo della Civiltà Romana, EUR, Rome. (Photo © M.C. Bishop)

Classical statue of a Celtic warrior from Mondragon (France) with a flat, oval shield. (Photo © J.C.N. Coulston)

AUXILIARY SHIELDS

One thing is abundantly clear: legionary shields for the most part differed from those used by auxiliaries under the Principate. Indeed, during the civil war of AD 68–69, describing the revolt in Rome itself against the Emperor Galba (r. AD 68–69), Tacitus noted the following: 'Then he ordered the *armamentarium* to be opened. The soldiers immediately seized arms without regard to military custom or rank, with no desire to distinguish praetorian or legionary by their proper *insignia*; they wore the helmets and shields of auxiliaries without distinction' (Tacitus, *Hist*. 1.38). Things had clearly reached rock-bottom when such contingencies were necessary. Indeed, the notion of differentiation between citizen and non-citizen troops by means of their shields has already been raised in the context of Trajan's Column (see p. 18).

Whereas the steady evolution of the curved legionary shield from oval, to truncated oval, to rectangle, then to flat oval and round was a steady progression, the wide range of auxiliary shield types and shapes reflected the diversity of the peoples employed by the Romans to assist their legions in the field.

Oval shields

The flat, oval shield was depicted on Trajan's Column as a ubiquitous indicator for regular auxiliary infantry and cavalry: there are no hexagonal or flat, rectangular shields depicted on the helical frieze. Indeed, it will not have been lost on the contemporary onlooker that this was exactly the same sort of shield being used there by not only barbarian irregulars in Roman service (the so-called *symmachiarii*), but even by Rome's Dacian opponents, distinguished only by the designs on the shields. Those same flat, oval shields are to be found among the captured weaponry (*spolia*) adorning the highly detailed pedestal reliefs at the base of Trajan's Column. This is unsurprising, as the origins of such shields lay with the various European tribal opponents the Roman Army encountered and who nowadays are grouped under the sometimes-contested label of 'Celtic'. A message along the lines of 'barbarians fighting against us' could be turned into 'barbarians fighting with us' seems to be implicit, however, in the representations of shields on Trajan's Column.

Away from metropolitan and monumental display art such shields are found depicted on the tombstones of Roman auxiliary troops, both infantry and cavalry. Firmus, an infantryman of *cohors Raetorum* at Bonn (Germany), holds an oval shield by its horizontal hand grip. The lower part of the shield board on this Tiberio-Claudian tombstone is obscured, but if the hand grip was central the shield would have provided about 63 per cent coverage of his height. Many other infantrymen, for whatever reason, chose to be depicted holding something else in the left hand (a scroll, a set of writing tablets, or a sword hilt), but cavalrymen are frequently shown on tombstones wielding an oval shield. If shown riding into action, then it was often held out near-horizontally, perhaps to afford some protection to the horse's head, or if the horse is shown being paraded without a rider, then it was slung horizontally from the horns of the saddle, presumably by means of a carrying strap. One of the Mainz pedestal reliefs depicts an auxiliary infantryman (or possibly a skirmishing legionary *lanciarius*) running, his flat, oval shield

towards the viewer, behind which he holds two javelins lengthwise and a third in his right hand. The shield's circular, domed boss is clearly visible, the flange secured to the shield board by four domed nails.

The absence of actual examples of oval Roman auxiliary shields from the Early or High Principate is in part made up for by the survival of fragments of leather covers from such shields. An example from Valkenburg (Netherlands) – once allowance is made for the cover overlapping the edge of the shield and a degree of shrinkage in the leather – would have fitted a shield board measuring around 1m in height and 0.5m in width, so around 60 per cent of the height of a man of 1.68m. Finds of curving shield binding, almost invariably made of brass (*orichalcum*) under the Early Principate, while not unknown, are far from common.

Whether flat, oval Roman auxiliary shields were constructed from planks or plywood is unknown. Iron-Age shields found at the La Têne site were all plank-built. Given that a high proportion of the auxiliary troops in Roman service used similar shield forms to those found illustrated on monumental sculpture as *spolia*, there is a strong possibility that their shields were also built from planks, not plywood. The Doncaster shield (see p. 32), if originally flat, might indicate that plywood could have been used, but if originally a crushed and flattened curved shield, it is of no help. This uncertainty only underlines the paucity of the surviving evidence. The fact that later oval shield boards were plank-built may be of some significance, here. However, it is equally possible that these may have resulted from the reintroduction of Gallic and Germanic plank-built shield-manufacturing traditions into the Roman Army. Until an indisputable example of a flat, oval shield board from the Early or High Principate is excavated, certainty will be impossible.

Indeed, the archaeological evidence is more informative for the period of the Later Principate than for the earlier periods. As well as the curved, rectangular shield from Tower 19 at Dura-Europos, a number of flat, oval shield boards were recovered by archaeologists from the hastily thrown-up earthen defences that reinforced (and raised) the city walls. These shields can probably be associated with the garrison of the city during the 3rd century AD, namely *cohors XX Palmyrenorum*, a double-strength, part-mounted Roman auxiliary unit. The shields were constructed from poplar

ABOVE LEFT
Mainz pedestal relief showing a running auxiliary or a skirmishing legionary *lanciarius* with a flat, oval shield. (Photo © M.C. Bishop)

ABOVE RIGHT
Oval shield depicted on the tombstone of the cavalryman Aemilius Durises from Bonn, slung from the saddle. (Photo © M.C. Bishop)

RIGHT
Dura-Europos oval painted Shield II at the time of excavation. (Yale University Art Gallery Dura-Europos Collection/Public Domain)

FAR RIGHT
Dura-Europos oval painted Shield II in its present state. After H.J. Gute. (Drawing M.C. Bishop)

planks glued together at the edge and bound with rawhide around the rim, sewn through holes around the periphery of the shield boards. Five near-complete shields were recovered from the hastily constructed embankment reinforcing the west wall of the city and two from Tower 19. Fragments of other shields recovered included two pieces from Tower 2 (the 'Tower of the Archers') and some from the siege-mine beneath Tower 19 (James 2004: 167).

Dura-Europos plank-built shield dimensions					
Shield	**Planks**	**Height**	**Width**	**Thickness (centre)**	**Thickness (edge)**
I	12–13	1.18m	*c.*0.95m	12mm	5mm
II	13	1.17m	0.97m	7mm	3mm
III	15	1.18m	0.94m	?	?
IV	12–13	1.15m	0.95m	8mm	3mm
V	14–15	1.15m	0.95m	9mm	4mm

The Dura-Europos oval shields were originally slightly domed and James has suggested that this may have been one of the reasons they were built from planks, since it would have been difficult to bend plywood in more than one direction (James 2004: 167), although the possibility of just such curvature being incorporated into curved, rectangular shields (see p. 22) may gainsay that hypothesis.

The dimensions – and most particularly the proportions – of the Dura-Europos oval shields show just how much this type of shield was evolving. Although the leather covers from the oval shields of the Early Principate, even allowing for uneven shrinkage, indicate a proportion of 2:1 for their height-to-width ratio, the ratio is much closer to 1:1 for the Dura-Europos shield boards. This is as a result of the shields growing broader.

Understandably, perhaps, a lot of attention has in the past been focused on the painted decoration of the Dura-Europos oval shields. Shield I bore a depiction of the final events of the Trojan War and Shield II showed a battle between Amazons and Greeks (both on a red ground), while Shield III was decorated with a representation of a warrior god on a green-blue ground. The rear of Shield II was also decorated, but with

Details from the cast of Trajan's Column in the Museo della Civiltà Romana showing oval shields belonging to (left) auxiliary cavalry and (right) infantry. (Photos © M.C. Bishop)

radiating lines of heart-shaped motifs on a dark-blue ground. The themes of Shields I and II coincide with those found among contemporary cavalry 'sports' face-mask helmets, which mimicked Greek, Amazon and Trojan characteristics. Shield III, on the other hand, reflects the sort of motifs of deities and heroes commonly found on both 'sports' armour (such as greaves and chamfrons) and combat equipment (like battle helmets and breastplates) of the period.

Hexagonal shields

The hexagonal shield had a flat top and bottom and an angle of around 145° in the middle of either long side. It seems to have been much rarer among auxiliary troops than either the oval or flat, rectangular forms, but occasional examples are depicted in representational art, albeit somewhat ineptly. The depiction of the cavalryman Leubius of the *ala Sebosiana* on a tombstone from Worms (Germany) appears to have one, as does a similar relief of Vonatorix of *ala Longiniana* from Bonn (the latter also wears a scale cuirass, quite rare among depictions of cavalrymen). Hexagonal shields are also depicted on the 'Battle of Ebenezer' fresco from the synagogue at Dura-Europos (the assumption here being that Old Testament-era soldiers were shown in contemporary equipment readily visible in that city). Cavalrymen depicted on the Tropaeum Traiani monument at Adamclisi, meanwhile, were depicted with both oval and hexagonal shields.

The U-sectioned binding of hexagonal shields is obviously quite distinctive and examples are known from Aislingen (Germany) and Vindonissa, both preserving an angle of around 110°, so presumably from the top or bottom of the shield.

Representation of a Roman cavalryman with a hexagonal shield on a metope at Adamclisi. (CristianChirita/Wikimedia/CC BY-SA 3.0)

Detail of the Early Principate tombstone of Annaius Daverzus showing his large, flat, rectangular shield. (Photo © J.C.N. Coulston)

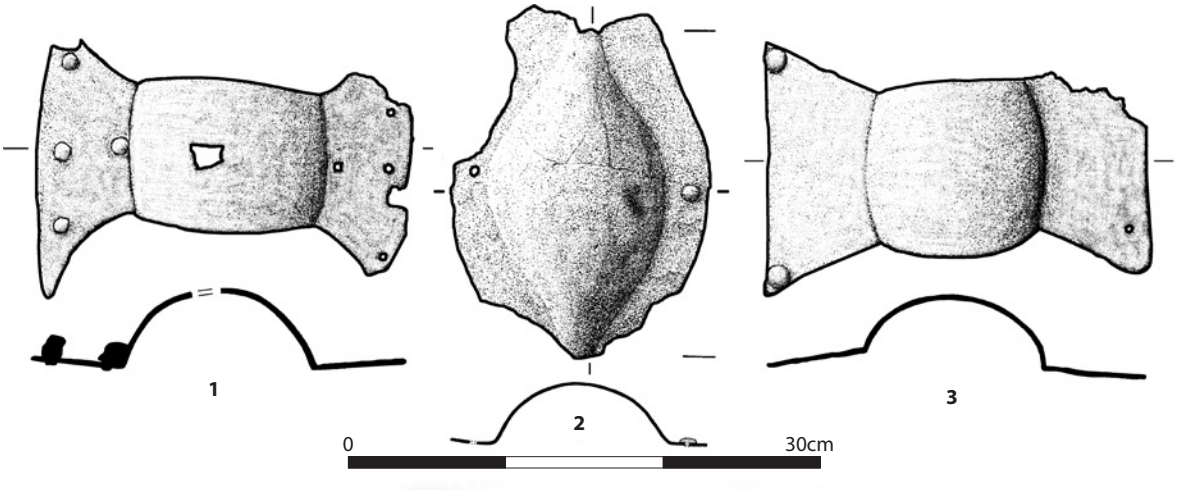
Flat, rectangular shields

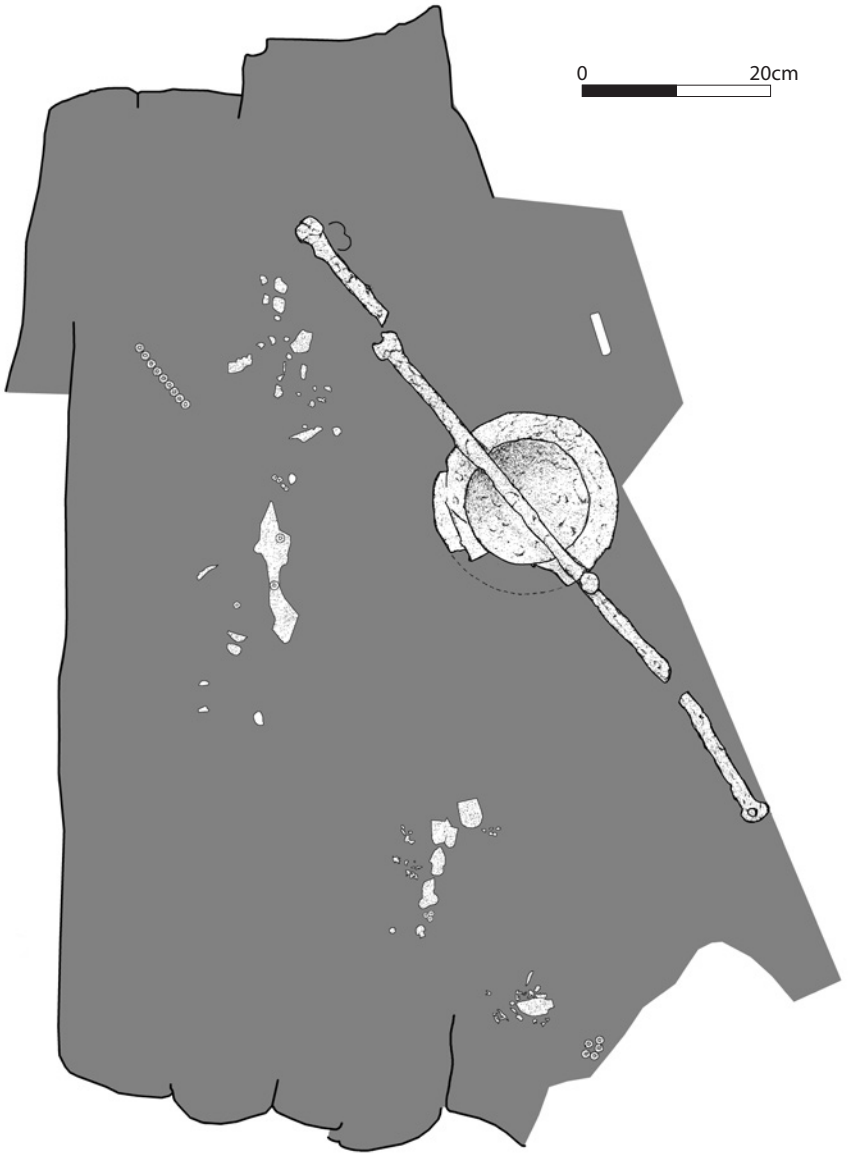
No flat, rectangular shields are depicted on Trajan's Column, the Marcus Column nor the Great Trajanic Frieze (on the Arch of Constantine) in Rome, or even on the metopes at Adamclisi. One of the finest of the Rhineland tombstones of the Early Principate, however, is that of Annaius Daverzus, an infantryman of *cohors IIII Delmatarum* (*CIL* XIII, 7507), and in his left hand he holds the horizontal hand grip of just such a large, flat, rectangular shield, the lower edge of which is barely visible without close inspection of his stele. The top edge is at shoulder height and the lower edge is just above the ankle, the shield board consequently affording cover for approximately 70 per cent of the height of its bearer, assuming it is accurately represented (and, in all other respects, this tombstone is notable for its accuracy).

The origins of this shield type probably also lie in the late pre-Roman Iron Age (LPRIA), to judge from the surviving sculptural representations. The fine classical sculpture from Mondragon depicts a warrior standing with a flat, oval shield resting on the ground in front of him. It has straight sides, top and bottom, and curved corners which are much more pronounced that those on the tombstone of Annaius Daverzus. Nevertheless, the two types are clearly related. The Mondragon shield is shown with a central, vertical spine, 'barleycorn' boss and butterfly-shaped reinforcement held in place by eight domed rivets, so presumably the original was metallic.

One archaeological example of a Roman shield that has not so far been described may possibly be within this category but, for various reasons that need to be outlined, it is problematic in many ways. The Doncaster shield (Buckland 1978) was excavated from under the Antonine rampart of the Roman fort of Danum, where it seems an attempt had been made to burn the shield on a bonfire. Lying face down, an iron boss and a strengthener, interpreted by the excavators as a grip, were located, along with the carbonized remains of at least two layers of wood decorated with copper-alloy attachments. The shield board survived to 0.64m wide and 1.25m high, so around 74 per cent of the height of a

'Barleycorn' and 'butterfly' bosses from (left and right) Caminreal (Spain) and (centre) Mainz. (Drawings M.C. Bishop)

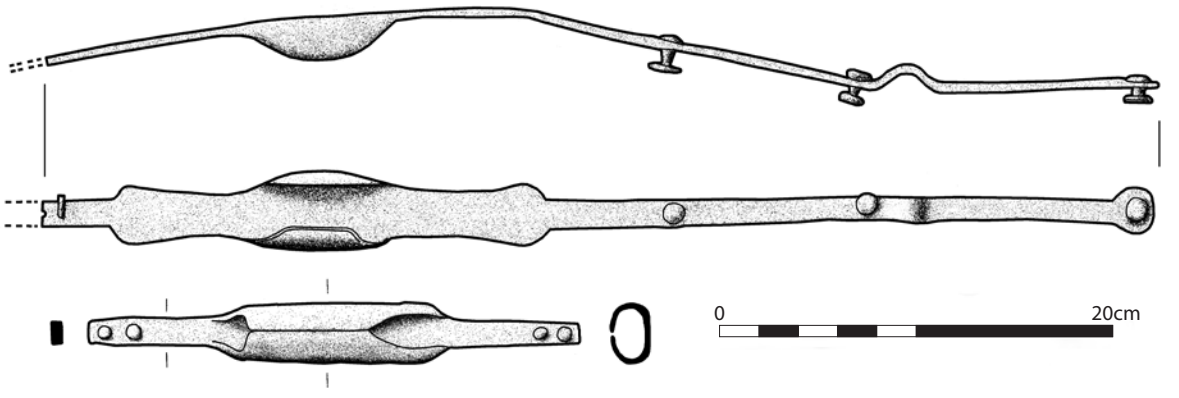




The Doncaster shield, with the shield board as excavated shaded. (Drawing M.C. Bishop)

1.68m man. It was also formed of three layers of wooden laths: an inner one of oak, orientated horizontally, between two outer layers of alder, orientated vertically. Alder is an unusual wood (soft and not very resilient), but one with which the Romans were familiar. The Corbridge Hoard chest was made from it, as was much of the first timber fort built at Carlisle (England), for it is often found in low-lying areas near rivers and was thus the first wood cleared before a fort such as that at Doncaster was built. It was in fact one of Pliny the Elder's favoured woods for constructing shields (see p. 42), but it is possible that availability may have been the key factor in its choice here.

The Doncaster shield closely resembles the Kasr el-Harit and Dura-Europos legionary shields in the method of its construction, but one thing sets it apart from all excavated Roman and Iron-Age shields, as well as numerous representations in various media: the evidence has been taken to indicate that it had a vertical hand grip. Corroded to the hemispherical boss was an iron



Iron wraparound hand grips from (top and centre) Strasbourg (France) and (bottom) Liberchies (Belgium). (Drawings M.C. Bishop)

D-sectioned shield strengthener 0.8m long, 17mm wide and 10mm thick. The boss retained oxidized remains of wood grain orientated horizontally and so the excavators saw no reason to doubt the vertical orientation of the iron strengthener and thus interpreted it as a vertical hand grip, not least because it was too long to be a horizontally aligned grip. There are a number of assumptions here which may help solve the puzzle, however.

First, the item interpreted as a hand grip is in fact an iron strengthener of a type frequently found for auxiliary shields and is matched by D-sectioned finds from Dangstetten and Xanten (Germany) and Newstead (Scotland) (cf. Nabbefeld 2008: Tafn. 13, 32 & 57). Hand grips had a completely different form, were much shorter, and were designed to wrap around the central, uncut part of the wooden shield-board aperture. Examples of such fittings come from a number of sites, including Dura-Europos, Liberchies (Belgium) and Strasbourg (France) and their use has been fully explained by Simon James (2004: 175–76, Fig. 97).

Second, the boss and strengthener were found detached from, and not on the same alignment as, the shield board, so it does not necessarily follow that they all belong together. A dump of material accompanying an abandonment phase of an early fort might see various unrelated components disposed of.

There are thus good reasons to be suspicious of any interpretation of the Doncaster shield as having originally had a vertical hand grip.

Other shields

Most shields fit into the categories already discussed, but a few do not. The excavations at Dura-Europos produced examples of shields made from reeds bound together with rawhide. This is not a standard form of Roman shield construction, but that does not preclude their use by troops in Roman service. The fact, however, that the city was held by the Palmyrenes, Parthians and Sassanid Persians, as well as the Romans, at various points makes attribution of these unusual pieces uncertain (James 2004: 169–70, 186–87, Figs 111–13). Similarly, it is difficult to explain examples of oval shields from the same site with no boss and their decoration orientated in such a way to show that the long axis was horizontal (James 2004: 169, 184–86, Figs 109–10).

Bosses and fittings

The standard circular boss with a hemispherical bowl was used throughout the Principate and across the empire. It could be plain or decorated and made

of copper alloy or iron. The decoration could be incised into the surface, as was the case with examples from Kirkham (England) or Halmágy (Hungary) (Nabbefeld 2008: Nos 453 & 617), or it could be embossed, like that on an unprovenanced item originally in the Guttmann Collection (*ibid*. No. 11).

Shield nails, used to attach a boss to the shield board, came in a variety of forms, both permanent and detachable. Permanent nails were principally either flat or domed and might (or might not) be decorated, particularly in the Later Principate. Incised and punched (*punctim*) eagle designs seem to have been particularly popular, as were depictions of the head of Mars, the god of war.

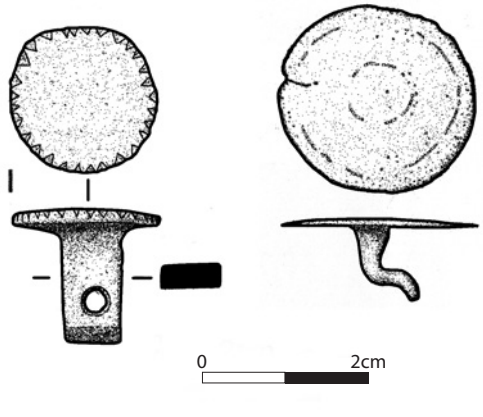
There does not seem to have been a fixed number of nails for any particular type of curved, rectangular shield. The Dura-Europos shield had holes for the fewest necessary, four, arranged one in each corner (matched by a surviving iron boss from Carnuntum in Austria). The Tyne boss belonging to Junius Dubitatus has holes for eight (one in each corner and one in the middle of each side), as does an unprovenanced copper-alloy example in a private collection. Another boss from Carnuntum had three nail holes at the top and three at the bottom, but none at the side. The inevitable conclusion is that the number of nails used was down to the whim of the armourer.

The circular form of boss was joined by a variety of alternatives from the Antonine period onwards. Eight-pointed star designs were found at Dura-Europos and come from other contexts, including one from London (now lost).

Bosses on auxiliary shields exhibited a wide variety of nail arrangements. The very minimum number of nails necessary was apparently two, positioned so as to secure the horizontal hand grip to the reverse side of the shield board, but this is rare. Far more common was four arranged crosswise: one each to attach the hand grip at both sides and one each at the top and bottom. There were also examples where the nails were not used to attach the hand grip; these might be arranged saltire-fashion, i.e. at the top right, top left, bottom right and bottom left. Finally, examples of the star-shaped bosses might have rivets in each projection, so a total of eight in all.

Circular bosses are often described simply as hemispherical, but there was in fact a variety of profiles when they were examined in detail. There was certainly a hemispherical type, where the dome was exactly half of a sphere, but there were elaborations on this. An extended hemisphere upon a vertical wall was also found, as was a form with more than half of a sphere, so incorporating a small amount of overhang. Conical forms are known, usually thought to derive from 'barbarian' influence (in truth, the origin of *all* boss forms), as are those with protrusions. Those that were deeper than a simple hemisphere may just have been stylistic variants, but it is also possible that they afforded more space in which to cram shock-absorbing padding.

One of the more unusual concepts that students of Roman shields have embraced is that of the 'parade



Undecorated shield nails of the (top left) temporary and (top right) permanent types. (Drawings M.C. Bishop)

Decorated examples of shield nails, showing (bottom left) a temporary shield nail with an incised eagle and (bottom right) a gorgon. (Photos P. Gross © Arachne)

Copper-alloy circular and star-shaped bosses in a private collection. (Photos P. Gross © Arachne)

shield'. With one notable exception – 'sports' helmets – the Roman Army does not appear to have used equipment that was specifically intended for parade purposes. Thus when the future Emperor Titus held a pay parade during the Siege of Jerusalem (AD 70), his troops smartened up by removing the covers from their (undoubtedly decorated) battle weaponry (Josephus, *Jewish War* 5.229), rather than donning special parade equipment. The exception was equipment used in the equestrian games known as the *hippika gymnasia*. Arrian, a friend of Hadrian and sometime governor of Cappadocia (Turkey), wrote a description of this unusual series of exercises designed as both training for Roman cavalry and a spectacle. Unusually, he made a point of commenting upon the fact that certain equipment was only used for these performances. He did not mention shields among the equipment, but there is good reason to think that they were included.

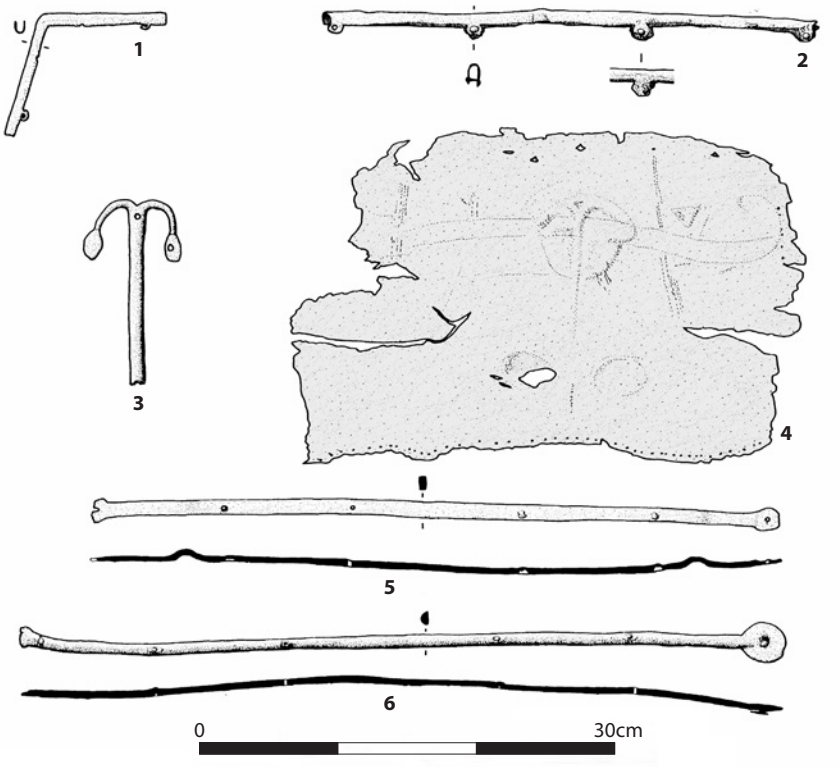
The idea that special, detachable 'parade' bosses were used in these combat simulations is found in many modern works on the subject, so merits close consideration. It has its origin in the extremely elaborate

Profiles of bosses of auxiliary shields. (Photos P. Gross © Arachne)

nature of some bosses, so highly decorated that it is reasoned they could not possibly have been risked in combat. In its favour is the existence of a limited number of nails, often decorated, that seem to have been held in place with split pins to facilitate removal (most bosses were attached with nails that were clenched and virtually impossible to remove easily). These 'temporary' nails were cast with flat, rectangular shanks pierced by a single nail hole. Permanent nails, by comparison, had narrower, tapering shanks and were usually square in cross-section. Since some items identified as decorated bosses have no nail holes at all, it has even been suggested that these may have been tied on to shields, possibly using soldered attachments. However, it is now thought that much of what had been considered to be 'parade' armour was perfectly serviceable as battle armour and was indeed intended for combat. Indeed, a move under the Late Principate towards dual-function, tripartite cavalry helmets, like the pseudo-Corinthian type, doubling as both battle and 'sports' armour by adding or removing a face mask, may mark a tendency to reduce the amount of equipment used, so in that context one shield board but two bosses might make sense.

Apart from what might be termed 'Romanized' bosses, typified by the hemispherical form, more Germanic types, usually conical, are found in contexts that clearly imply familiarity with them among at least some Roman auxiliary troops. This (or a derivative thereof) is the form that would ultimately be found adorning the round shield on the diptych of Stilicho in Monza Cathedral.

Other metallic fittings can be associated with auxiliary shields, as the Doncaster shield illustrated. Strengthening bars were arranged horizontally and vertically inside a shield and were made of D-shaped iron rods, fastened



Shield fittings, including iron strengthening bars (**3**, **5**, and **6** from Newstead) and copper-alloy binding (**1** from Aislingen in Germany and **2** from Spettisbury Rings in England). A leather shield cover from Vindonissa (**4**) shows the impression of an iron strengthener. (Drawings M.C. Bishop)

Detail of the diptych of Stilicho showing a round shield with conical boss. (DEA PICTURE LIBRARY/De Agostini via Getty Images)

through the shield board with iron rivets. Where they crossed, one bar would be raised to pass over the other. These strengtheners had rounded expansions where the nails passed through and might be terminated with either a circular expansion or bifurcating arms. Legionary shields do not appear to have used these metal strengtheners, but rather used wooden strips attached with trenails, to judge from the finds from Kasr el-Harit and Dura-Europos.

GLADIATORIAL SHIELDS

There was a close relationship between military and gladiatorial equipment from the 3rd century BC onwards, just as there was in training methods and, indeed, the style of hand-to-hand combat (Bishop 2016: 58). The Romans had a distinct penchant for depicting gladiators on wall paintings, mosaics, reliefs, and even painted onto glassware or moulded into ceramic lamps, so there is no shortage of representations of gladiatorial shields.

Romans tended to classify arena combatants as either small-shield (*parmularii*) or large-shield (*scutarii*) gladiators and these tended to fight each other (the only truly asymmetric combat being large-shield *murmillones* against the shieldless *retiarii*, armed with trident and net). Small-shield gladiators

included the horseman (*eques*), hoplite (*hoplomachus*) and Thracian (*Thraex*), while the fish man (*murmillo*), teaser (*provocator*), Samnite (*Samnis*) and pursuer (*secutor*) were among the large-shield group. Small-shield gladiators tended to wear large greaves, while those with the larger, military-style shields had shorter ones which finished below the knee, clearly demonstrating a link between shield and greave coverage.

An example of a small, circular shield was found in the gladiatorial barracks at Pompeii (Italy) along with various other items of equipment. Measuring 0.37m in diameter and weighing 1.6kg, it was convex, made of copper alloy and was decorated with copper and silver inlay in the form of concentric laurel wreaths.

A mosaic dating to the 4th century AD from a villa at Torre Nuova (Italy) depicts the curved, rectangular shield as still in use by gladiators. Although no examples of this type of shield (or its components) have been identified as gladiatorial, it should be noted that Dura-Europos possessed a small arena within the military compound that plausibly could have been used for gladiatorial contests. This in turn might be thought to provide a context for the seemingly anachronistic presence of curved, rectangular shields in the city during the 3rd century AD. Moreover, the best-preserved example bore no owner's name. Such an interpretation seems unlikely, however, as the known examples were found along the city walls and well away from the arena, and the Tyne shield shows that ownership inscriptions could be punched into the boss.

Circular shield from the gladiator barracks in Pompeii. (De Agostini/Getty Images)

FAR LEFT
Stele of a pursuer (*secutor*) gladiator equipped with an oblong shield and short sword. (DEA/A. DAGLI ORTI/ De Agostini via Getty Images)

LEFT
Detail from the 4th-century AD gladiator mosaic at the Borghese estate (Sicily, Italy), showing a *murmillo* with a curved, rectangular shield. (© Alinari Archives/CORBIS/ Corbis via Getty Images)

MANUFACTURE AND DECORATION

Workshops

A papyrus document surviving from Egypt, probably dating to the 2nd or 3rd century AD, gives details of tasks being undertaken in a legionary workshop (*fabrica*) on two consecutive days. Listing the numbers of legionary soldiers, auxiliaries, civilians and slaves participating, it also includes among the items produced references to both flat shields (*scuta planata*) and *scuta talaria*. When used in the context of clothing, the Latin adjective *talaris* usually means 'ankle-length', so this could conceivably refer to very long shields. The Greek word *talaros* (τάλαρος) means basket, however, so (given that Greek was widely spoken and written in Roman Egypt) it is possible that *scuta talaria* is actually a reference to the wicker shields used by the Roman Army in training (see p. 44).

Vegetius recorded that legions produced everything they needed themselves, noting 'They even had workshops for shields, cuirasses, and bows, in which they fashioned arrows, missiles, helmets, and all sorts of weapons' (*DRM* 2.11). There are various references to shield-makers (*scutarii*) both in texts from Plautus in the 3rd/2nd century BC onwards (*Epidicus* 1.1.35) and in sub-literary sources such as writing tablets from Vindolanda (England) (*Tab. Vind.* 184; 861) and Vindonissa (Switzerland) (*AE* 1926, 3). Note that under the Dominate, the term *scutarius* was also applied to mounted guardsmen so should not be confused with these earlier shield-makers.

By the time of the Dominate, certain sites had come to specialize in shield manufacture and these were included in the *Notitia Dignitatum*. For the East, the *Notitia* listed workshops for shields and weapons (*scutaria et armorum*) at Damascus, Antioch and Edessa; within Pontus at Nicomedia; within Asia at Sardis; within Thrace at Hadrianopolis and Marcianopolis; and in Illyricum at Horreomargum. In the West, Illyricum is also recorded as having held a workshop for shields, saddles and weapons at Sirmium, and shields alone at Aquincum, Carnuntum and Lauriacum. There was a workshop for shields and weapons at Verona, and one for shields at Cremona. In Gaul there were workshops for shields in Autun and Trier, with one for long swords (*spathae*) and shields in Amiens.

While plank-built shield boards remained popular with their foes all around them, the Romans adopted the practice of forming shields from what was effectively plywood during the Republican period. This held

E **SHIELD MANUFACTURE IN A *FABRICA SCUTORUM***

Under the Dominate, production of equipment became centralized to a limited number of locations. The *Notitia Dignitatum* records the sites of a number of Late Roman shield workshops (*fabricae*). One of these was at Lauriacum and this scene depicts various processes in the manufacture of shields within a courtyard building in the legionary fortress. Weather permitting, courtyards would have been exploited as spaces where construction processes could be undertaken. Here, men are bringing planks which are then glued together and an aperture cut for the grip behind the boss. The assembled shields are covered and then painted by hand while a circular, hemispherical boss is forged for each and then nailed in place. Finally, the completed shields are carried off and temporarily stacked for drying.

The soldiers themselves wear the long-sleeved tunics and trousers typical of the Dominate while each also sports the *pilleus Pannonicus*, a cap that originated in the Danubian region but which became characteristic of Late Roman soldiers and probably served as casual headgear as well as an arming cap within the helmet.

several advantages for them, one of the most important being the ability of a plywood shield board to be shaped after assembly into the curved form the Romans had come to favour. Whether this was the prime reason for the adoption of plywood is open to debate, but experimentation suggests that its resilience to penetration may also have been a major factor (see below). The laths were probably formed by splitting, rather than by cutting or sawing them from their parent trees. Pliny the Elder had some useful advice for the choice of wood when making shields:

> ... trees that grow near water are also the most flexible, and for that reason the best adapted for the construction of shields. When a cut is made in them, they will immediately contract, and so close up their wounds, simultaneously making it more difficult for iron to penetrate. Among these woods are fig, willow, lime, birch, elder, and both varieties of poplar. The lightest of all these woods, and so the most useful, are fig and willow. All of them are employed, however, in the manufacture of basketry and other wicker utensils. They possess a degree of whiteness and hardness which makes them extremely suitable for carving. The plane is very flexible, but it is moist and slimy like the alder. (Pliny, *Natural History* 16.77)

Manufacture

The process by which curved Roman shields were shaped is unknown. Experimental archaeology can suggest a number of ways but, as ever, it can only ever show what *could* be done, not what was *actually* done. Many modern shield reconstructions use sheet plywood to form the shield board, but this was obviously not the technique employed on the surviving curved *scuta*. It is unclear whether shield boards were constructed and then warped by soaking or steaming (Nabbefeld 2008: 29), or whether they were constructed on a curved former from the beginning (Kimmig 1940: 107 n.4).

Bosses could be made in two principal ways: either by raising on an anvil or, in the case of copper-alloy examples, spun. Spun examples often feature characteristic marks from the process, particularly a centring point, but they also tend to corrode in a certain way, a product of weaknesses introduced into the metal during the spinning process.

Most edging or binding was made of *orichalcum* under the Early Principate. As such, it was formed from sheet metal cut into lengths, with semicircular expansions on either side through which it was nailed to the shield board (normally with nails of the same metal). Corners were carefully shaped where required, whether for rectangular or hexagonal shields, although some lengths of sheet metal are found distorted and at first glance these can be mistaken for deliberately bent examples. Some German shields in Roman service had more elaborate expansions on the binding, decorated in a similar way to their hand grips.

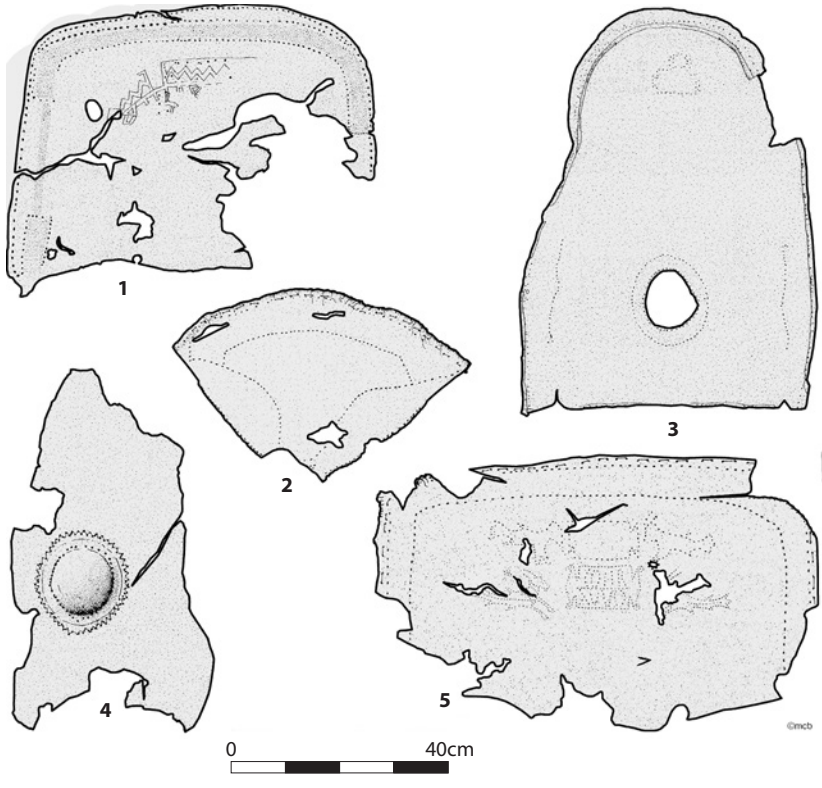
There was presumably a system for the repair and resupply of damaged shields when on campaign, and Trajan's Column includes a scene in which shields are shown being transported both by pack animal and by cart (Scene CVI).

Decoration

All of the available evidence indicates that shields were brightly painted: the surviving shield boards from Dura-Europos make this abundantly clear.

As was noted above, the blazons on shields depicted on Trajan's Column have (understandably) received a disproportionate amount of attention, perhaps because of the mistaken belief that it presented an accurate record, rather than sculptors' proclivities.

The practicalities of the painting of the Dura-Europos shield boards have been studied in some detail, both at the time of publication and more recently in the case of one of the oval shields, using more advanced analytical techniques (Gunnison & Passeri 2014). This latest examination showed that the entire surface of the shield was coated with a thin layer of glue and then a ground layer of calcium- and lead-based white paint (noted in the original conservation report as 'crude gypsum') to provide a smooth surface to work upon. A preparatory layer of reddish colour (which included a mixture of organic and mineral reds and whites) was added, and that then had the composition set out in two or three tones, with highlight and shadows added in pure colour, with dark-brown lines used for emphasis. Analysis of the paints used found both calcium and lead whites, organic and lead reds, vermilion, indigo, along with what may be pigments derived from iron oxide or earth. There may have been two binding mediums used, possibly including casein or egg yolk, differing between the preparation layer and the paint.



Examples of excavated leather covers from shields of various shapes. Found at Windisch, Switzerland (**1** and **4**); Castleford, England (**2**); Valkenburg, in the Netherlands (**3**); and Leiden-Roomburg, also in the Netherlands (**5**). (Drawings M.C. Bishop)

The possibility that some at least of the decorative elements from shields were appliqués has been mentioned (see p. 5) and, issues of practicality notwithstanding, craftsmen would be needed to fashion these. However, they required no extra skills beyond what military craftsmen needed to produce any other item of decorated equipment.

Surviving examples of leather covers show elements of decoration incorporated into what was essentially a functional object. Appliqué leather patches could help identify a unit, either explicitly by means of an inscription (such as the examples from Vindonissa), or implicitly with a unit emblem, such as a cover with the stitched outline of the goddess Minerva from Bonn or even both, as on a cover of *cohors XV Voluntariorum* from the fort at Leiden-Roomburg (Netherlands). It has even been suggested that the openwork inscription patches from Vindonissa may have been mounted on contrasting-coloured material to help make them stand out.

USE

Hand-to-hand combat

It has already been stressed that the shield was intrinsic to the Roman method of hand-to-hand combat, whether it be to parry or to strike. Indeed, one reason for the reduction in size of the curved legionary shield between the Republican period and the Principate may have been to improve its handling characteristics in combat, as well as to reduce its weight by one-quarter.

Vegetius described how Roman soldiers before his time trained to prepare themselves for combat: 'The ancients, as is recorded in the books, trained recruits in this way. They wove rounded shields of wicker (*scuta de vimine*) like basketry, in such a way that the frame would be double the weight of a state-issue shield (*scutum publicum*)' (Vegetius, *DRM* 1.11). The theory was that the use of these and other double-weight dummy weapons (namely the sword and javelin) contributed to the soldier being comfortable with the regular equipment they later had to use in battle. A similar system was employed for gladiatorial training in the 'Roman' fighting style.

The curved, rectangular legionary shield can be seen being used in action on the metopes on the Tropaeum Traiani monument at Adamclisi which are almost certainly a more reliable source than Trajan's Column, since (unlike the latter) the monument was probably produced by serving or former soldiers, rather than the metropolitan sculptors with their Hellenizing tendencies who worked on the Trajan's Column frieze.

At long range, the shield was designed to protect its bearer from missiles, whether they be javelins, arrows or sling shot (of stone, baked clay or lead). Such attacks could sometimes be extremely intense and the shield offered vital protection: '… they counted out to Caesar about thirty thousand arrows which had been shot at the redoubt, and when the shield of the centurion Scaeva was brought to him one hundred and twenty holes were found in it' (Caesar, *Civil War* 3.53). The efficacy of a shield against high-velocity artillery bolts was more questionable – the Latin word *catapulta*, after all, derived from the Greek *katapeltes* (καταπέλτης), meaning 'penetrating shields' and accounts of catapult bolts passing through shields, armour and bodies only serve to confirm this. Arrian reported that this had even happened

F

TRAINING WITH PRACTICE SHIELDS

Training (*exercitio*) was vital to the success of the Roman Army from the 3rd century BC onwards. According to Vegetius, it was undertaken daily by both new recruits and seasoned veterans. Roman infantry like these Claudian troops trained with double-weight shields made of wicker and singlestick sword-substitutes made of wood, likewise twice their normal weight. Wicker shields would have been lighter than similarly sized plywood or plank-built examples, so in order for them to have been heavier, they must have been weighted with lead. With a modern replica of a curved, rectangular shield weighing between 5.5kg and 7.5kg, this implies a training shield weight of between 11kg and 15kg! The theory behind this weighting is that practising with heavier-than-usual equipment made the regular weaponry seem easier to use. The reality may have been that it simply provided a workout for the trainees: either way the result would be of use.

In the foreground, both curved, rectangular and flat shield types (oval and rectangular) are in use for more advanced, hand-to-hand combat with an opponent. They can be seen being used for both defending against and attacking an opponent. In the background, new recruits are being drilled in striking at a wooden stake, learning to use both sword and shield together offensively. This initial training, which was introduced during the Punic Wars (264–146 BC) from the gladiatorial schools and took place on the training ground (*campus*) outside a fortification, familiarized men with the coordination of both weapons, but it was only in simulated combat that the full potential of the combination of sword and shield could be realized. Here both parrying and attacking with the weighted shields could be experienced and become instinctive.

to Alexander the Great during his siege of Gaza (332 BC): 'he was himself wounded by a catapult bolt in the shoulder, straight through the shield and breastplate' (Arrian, *The Anabasis* 2.27).

The most obvious use of the shield at close range was also defensive, parrying incoming missiles such as arrows or javelins and, in close combat, blows from thrusting spears and swords. Even then, the impetus of comparatively low-velocity missiles at short range could sometimes be too great. The tale of two rival centurions in Caesar's army, Vorenus and Pullo (Caesar, *Gallic War* 5.44), included the detail that Pullo's shield was pierced at close range by a javelin which then stuck in his belt (which saved his life).

The central hand grip made for considerable versatility as to how the shield was wielded against a threat. It could be raised to defend against high blows, held in front to protect against a frontal attack, or lowered to parry blows aimed towards the feet or shins. Preparing for combat, the soldier tucked himself behind his shield so that as little flesh as possible was exposed. The reintroduction of greaves under the Principate (they had first been used with the larger, Republican shield) suggests that a need was felt to protect the lower legs in this way.

The offensive use of the shield is typified by the exhortations Tacitus gave to the commander Suetonius Paulinus when addressing his men prior to the final confrontation with Boudica (AD 60–61): '... keeping their order close, and, when their *pila* were discharged, employing shield boss (*umbo*) and sword (*gladius*), let them steadily pile up the dead and forget the thought of plunder ...' (Tacitus, *Annals* 14.36). The pairing of 'shield boss' and 'sword' in the text shows how closely linked the two were: strike with the boss and then with the sword. It was a tactic that may have had the element of surprise in its favour, particularly against opponents (like the Britons) unused to this double-blow. While it is unlikely that Paulinus actually had to remind his soldiers to do this, Tacitus used the opportunity to remind his audience of how this worked. It was also a feature of his account of the decisive, auxiliary-led battle of Mons Graupius (AD 83): 'No sooner did the Batavians begin to close with the enemy, to strike them with their shield bosses (*umbo*), to disfigure their faces, and overthrowing the force on the plain to advance their line up the hill, than the other auxiliary cohorts joined with eager rivalry in cutting down all the nearest of the foe' (Tacitus, *Agricola* 36). Just such a blow with a boss seems to be depicted on one of the metopes on the Tropaeum Traiani monument at Adamclisi, where a legionary has his shield raised

G **USING THE SHIELD IN COMBAT**

Roman soldiers were trained to use the shield both defensively and offensively and a range of moves were possible. The central figure (**1**), based on a relief on a column base from the headquarters building in the legionary fortress of Mogontiacum at Mainz, shows the classic combat stance of a legionary from the second half of the 1st century AD. His shield is braced against his left leg and his right leg and sword arm are kept back ready to strike. His head is tucked in behind his shield so that he maximizes its protection while still having a clear view forward. He wears the ubiquitous mail shirt (*lorica hamata*) found throughout the Roman period. His Mainz/Krefeld-Gellep variant of a Weisenau (Robinson's Imperial-Italic type D) helmet is modelled on an example from Matilo (Netherlands) which is decorated with dolphins on the brow, just like those on the relief. He has a curved, rectangular shield which retains a residual spine above and below an iron 'barleycorn' boss similar to examples from Mainz.

At the top, the shield can be seen being used to parry blows from above by a Republican legionary (**2**), the front by his Caesarian successor (**3**) and below by an Augustan soldier (**4**). At the bottom are examples of the shield being used offensively, with an auxiliary soldier of the Early Principate striking with the upper rim of his flat, rectangular shield (**5**), a legionary from the High Principate using the boss (**6**), and one from the Later Principate striking downwards with the lower rim of the shield board (**7**).


1
2
3
4
5
6
7

Metopes on the Tropaeum Traiani monument at Adamclisi depicting the curved, rectangular legionary shield in use (above) defensively and (below) offensively. (Photos © J.C.N. Coulston)

against a *falx*-wielding Dacian while at the same time thrusting his short sword into his enemy's belly.

Even so, Livy, writing of combat against the Umbrians in 308 BC, was probably exaggerating when he recorded that the Romans 'using shields more than than swords, swinging them from the shoulder and felling their enemies with the bosses' (Livy 9.41.18).

Metal fittings, such as bosses and edge binding retrieved from the archaeological record, are often the only way of assessing damage to shields, since the survival of shield boards is such a rare phenomenon. In the case of binding, it can be difficult to distinguish genuine combat attrition from the sort of damage that could occur by simply removing it for whatever reason, such as recycling or repair. Some bosses, on the other hand, do show signs of receiving one or more blows that may be the result of being struck with an edged weapon. Once damaged in this way, a boss became useless and the absence of obviously repaired examples suggests they were, wherever possible, recycled (which was probably the main mechanism for them ending up in the archaeological record).

Bosses that had been removed from their shield boards are usually found with no nails present, while those that rotted *in situ* in the ground will still have nails, almost invariably clenched over so that the thickness of the absent shield board in the centre can be determined. In much the same way, the thickness at the edge of a board is betrayed by surviving examples of U-sectioned, copper-alloy binding in the Early and High Principate periods.

A central, horizontal hand grip offered great versatility in offensive situations, for not just the boss could be used to strike. The upper edge of the shield could be raised to intercept an attacker trying to reach over the shield board, while the lower edge could be jammed down against the feet of an unsuspecting opponent, or even thrust horizontally into an opponent. This last tactic is one way of interpreting one of the Mainz pedestal reliefs, in which a legionary in the foreground prepares to strike while his comrade has his shield raised, the lower rim towards notional opponents.

The matter of vertical hand grips is difficult to resolve. Infantry shields, both curved legionary and flat auxiliary examples, quite clearly used horizontal grips, as representational and archaeological evidence confirms. This then leaves the possibility that cavalry shields might have employed vertical grips. Since cavalry tombstone and other sculptural evidence never shows the grip region (inevitably hidden behind the horse's head), this important source is of no help other than to show that the angle at which the shield was held – around 45° – would not be completely impossible with a vertical grip. The Doncaster shield, however, offers far from convincing evidence to support such a hypothesis. Moreover, the flat, oval shields from Dura-Europos, apparently belonging to a part-mounted cohort and decorated with themes reminiscent of the *hippika gymnasia*, would seem to mitigate against it.

The evolution of Roman shield forms over the centuries represents a continuing quest to reconcile the varying needs of the soldier using them. There was inevitably always going to be a conflict between weight and the protection afforded and, with the benefit of hindsight, it is perhaps easy to see a progression from the round shield of pre-Republican days, through the curved, rectangular form, back to the round shield of the Dominate, and decide that this was because that form of shield was the best all-round solution to the weight versus protection issue. This may, however, be an

unwarranted oversimplification. Examination of the other weaponry of the Roman soldier and the convergence of legionary and auxiliary troops may suggest that there was a development of fighting styles which was tracked, if not actually influenced, by shield size and shape.

Moving from the *clipeus* to the *scutum* coincided, if the sources are to be believed, with organizational reforms of the Roman Army that inevitably changed the way it fought. Likewise, the large, curved, rectangular shield and long *gladius Hispaniensis* of the Republic gave way to the smaller, cut-off shield and shorter sword of the Early Principate. It is difficult to see how these could have changed without the fighting style evolving to accommodate them, or vice versa. The fact is: the two are linked. Similarly, the move to a flat, oval shield that was broader than its predecessors for both legionary and auxiliary troops indicates that, once again, the style of fighting was evolving and with it the equipment. Finally, the return to the circular shield was just the next logical step. Once, this would have been put down to the 'barbarization' of the Roman Army under the Dominate, but now it is clear that it was part of a process the Roman Army was undergoing from its earliest days: adopting and adapting the equipment of those it fought against or with whom they allied themselves. Far from 'barbarization', this was an ever-evolving process of 'Romanization'.

The *testudo*

The term *testudo* (tortoise) was used to describe both a type of wheeled shed used in siege warfare to approach the base of a besieged city wall and a formation of men with their shields held above them to afford a similar degree of protection. The Greek general Xenophon was the first to describe the wheeled shed as a *cheleon* (χελώνη) or 'tortoise', the animal being both well-protected and slow-moving, of course. The use of shields to form a more versatile version of the siege machine seems to be Roman in origin, however. The earliest description of the use of the shield formation by the Romans comes from Polybios, writing about the siege of the Macedonian city of Herakleion (169 BC): 'Herakleion was taken in a peculiar manner. The city had a low wall of no great extent on one side, and to attack this the Romans employed three picked maniples. The men of the first held their shields over their heads and closed up, so that, thanks to the density of shields, it became like a tiled roof' (Polybios, *Histories* 28.11).

A maniple at the time was 160 men, and such a large formation would have taken practice and coordination, so was not something dreamed up on the spur of the moment. Cassius Dio noted that the *testudo* served two purposes:

> … they either approach a fortification to assault it, often even enabling men to scale the very walls, or sometimes, when surrounded by archers, they all crouch together – even the horses being taught to kneel or lie down – and thereby cause the foe to think that they are exhausted; then, when the enemy draws near, they suddenly rise and throw them into consternation. (Cassius Dio 49.30)

Dio also noted that 'it is so marvellously strong that men can walk upon it, and whenever they come to a narrow ravine, even horses and vehicles can be driven over it' (*ibid.*). There were variants, however, and Livy's description of that same attack on Herakleion differed somewhat:

Detail of the helical frieze on Trajan's Column depicting a *testudo* formation being used to besiege a Dacian city. From a cast in the Museo della Civiltà Romana, EUR, Rome. (Photo © M.C. Bishop)

H

FORMING THE *TESTUDO*

A Republican *centuria* forming a *testudo* (tortoise) shield formation. The unwieldy nature of the early curved, oval shield meant the *testudo* had to be assembled with a modicum of care. The depiction on Trajan's Column (Scene LXXI) shows the shields overlapping from the back towards the front of the formation, which would require the men to form up from the front, as in this reconstruction. The famed rigidity of the structure may have meant that the men holding the top shields not only held the hand grip of their own shield with their left hand, but also used their right hand to support the edges of their own shield and their neighbour's shield where they touched. Additional men at either end were needed to provide flank shields, presumably those on the right-hand end unusually holding their shields in the right hand. The troops were so closely packed together that the *testudo* was the only formation where Roman soldiers were obliged to move in step. This basic form of the *testudo* is described by many writers, as well as illustrated on Trajan's Column and the derivative Marcus Column (Scene LIV) in Rome, the latter suitably embellished with items (including cartwheels) thrown down upon the shield 'roof'.


E. Rava '20

> … they formed a square with their shields held over their heads, touching one another; those in the front rank standing erect; those in the second stooping slightly; those in the third and fourth bending lower and lower; while those in the rear rank rested on their knees. In this way they formed a *testudo*, which sloped like the roof of a house. From a distance of fifty feet [15m], two fully armed men ran forward and, pretending to threaten one another, went from the lowest to the highest part of the *testudo* over the closely locked shields. (Livy 44.9)

This seemingly impractical formation had a specific and rather unexpected purpose: 'A *testudo* formed in this way was brought up against the base of the wall. When the soldiers who were mounted on it came close up to the wall they were at the same height as the defenders, and when these were driven off, the soldiers of two units climbed over into the city' (*ibid.*). Ammianus Marcellinus described the same, sloping formation being used many years later, in the 4th century AD, 'in order that the blows of missiles and rocks slid down the sloping side, flowing off like so much rain' (Ammianus 26.8.9).

Although the *testudo* was a trick the Romans would repeatedly employ against less-well-trained opponents, the Batavian Revolt (AD 69–70) saw the tables turned, when, in AD 69, rebelling Roman auxiliaries exploited their training and used it to attack legionaries besieged within the legionary fortress of Vetera, even to the point of mounting men upon the *testudo* (Tacitus, *Histories* 4.23). In doing so, they confirmed that it was not only legionaries who used the tactic (despite what monumental sculpture might have suggested).

Unit identification

It is also apparent that units could be distinguished by their blazons (*signa*; see p. 18):

Trajan's Column legionary (left) and auxiliary (right) blazons. From a cast in the Museo della Civiltà Romana, EUR, Rome. (Photos © M.C. Bishop)

FAR LEFT
Mainz pedestal relief with blazon. (Photo © M.C. Bishop)

LEFT
Mainz pedestal relief with blazon. (Carole Raddato/ Wikimedia/CC BY-SA 2.0)

An enormous *ballista* belonging to *legio XV* began to crush the opposing battle line with the huge stones that it hurled; and it would have caused greater destruction if it had not been for the brave deed of two soldiers, who, picking up shields to disguise themselves, cut

BELOW LEFT
Detail from the metopes at Adamclisi showing citizen soldiers standing guard. (Photo © J.C.N. Coulston)

BELOW RIGHT
Detail from the metopes at Adamclisi showing citizen soldiers in combat with blazons visible on their shields. (CristianChirita/Wikimedia Commons/CC BY-SA 3.0)

Forked lightning-bolt shield ornament from Kalkriese (Germany). (Photo Christian Grovermann © VARUSSCHLACHT im Osnabrücker Land GmbH)

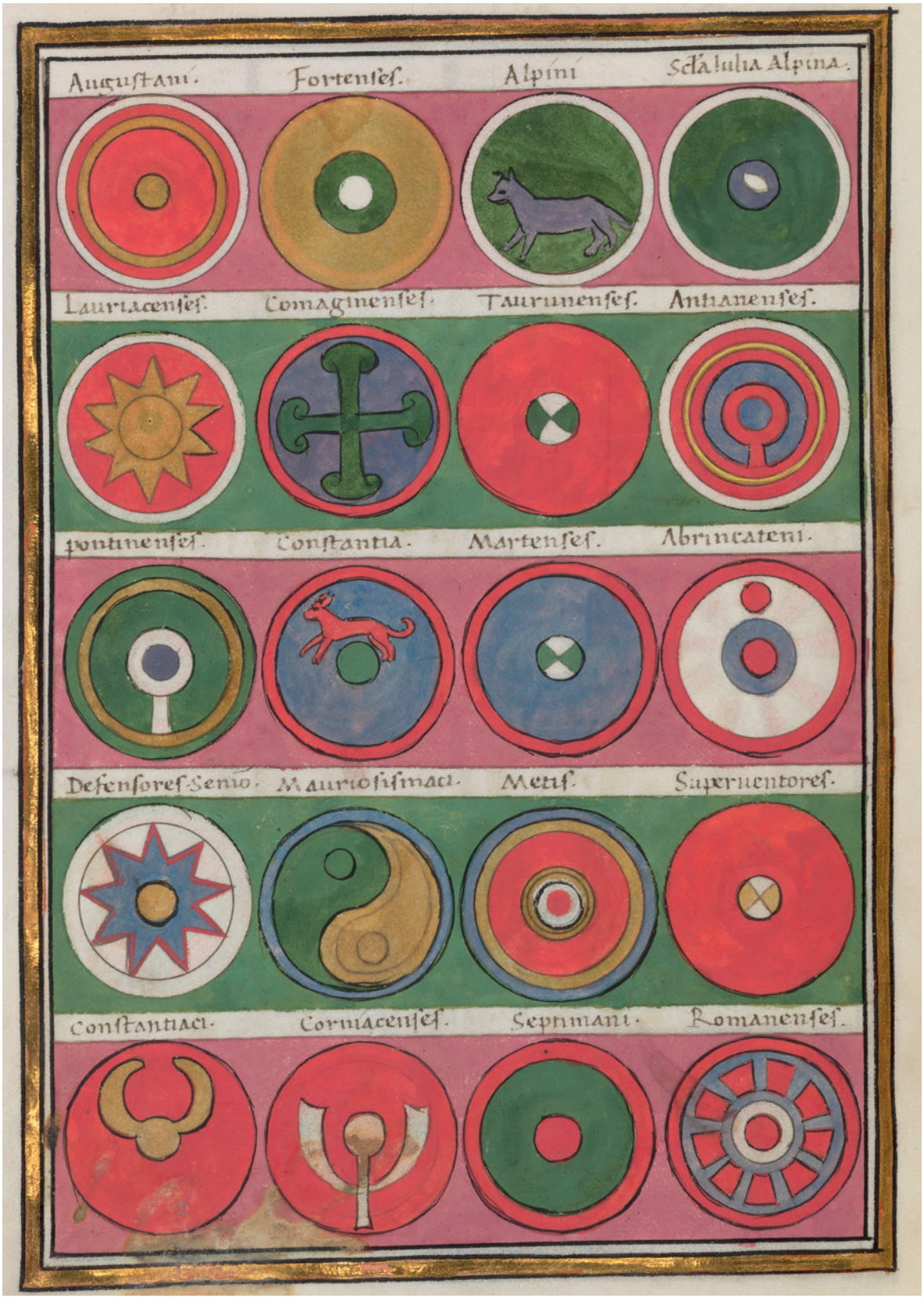
OPPOSITE
Medieval manuscript illustration from the *Notitia Dignitatum* showing blazons on the shields of troops under the *magister peditum*. (Photo Bodleian Libraries)

the chain and torsion springs of the machine. They were at once run through and their names lost. There is no doubt about this fact. (Tacitus, *Hist.* 3.23)

Detail of a tombstone from Aquileia depicting a soldier with a large, circular shield. (Drawing M.C. Bishop)

Ammianus Marcellinus (16.12.6) even notes that it was possible for barbarian opponents to recognize Roman units from their shield devices. Attempts have been made to identify the various shield designs on Trajan's Column with particular units, but all are unconvincing. For legionary shields, they mostly show variations on the theme of a central vertical thunderbolt (often coinciding with a spine on the face of the shield board), forked lightning emerging diagonally and wings sprouting sideways. These are all interpreted as attributes of Jupiter, god of sky and thunder and king of the gods, the thunderbolt being his favoured weapon, with the forked lightning recalling his origins as a weather god, and eagle wings because the bird was sacred to him (he had even taken its form as a disguise). The auxiliary blazons depicted on Trajan's Column are more abstract, incorporating stars and crescents, but also featuring laurel wreaths around the central boss.

More promising are depictions of blazons on provincial sculpture and tombstones. The memorial to the *aquilifer* Cn. Musius of *legio XIIII Gemina* found at Mainz shows the front face of his curved, oval shield, which he holds rather awkwardly, as if to show off the design sculpted on it. Similarly, one of the pedestal reliefs from Mainz depicts a blazon that may well have belonged to *legio I Adiutrix*, which was based there during Domitian's Chattan War and was raised from the Misenum fleet (an origin acknowledged in the dolphin 'eyebrows' on the soldier's helmet). Another pedestal relief, with a soldier wearing what is probably a mail shirt, bears a shield with a similar device on its face.


Augustani.
Fortenses.
Alpini
Sclalulia Alpina.
Lauriacenses.
Comagimenses.
Taurunenses.
Antianenses.
pontinenses.
Constantia.
Martenses.
Abrincateni.
Defensores Senio.
Mauriosismaci.
Metis.
Superuentores.
Constantiaci.
Cornacenses.
Septimani.
Romanenses.

Hunting-scene mosaic from Piazza Armerina in Sicily (Italy) showing Dominate-era round shields. (Andia/Universal Images Group via Getty Images)

Blazons that may have belonged to the praetorians appear on Cancelleria Relief A. These incorporated the familiar thunderbolts, forked lightning and eagle wings, along with stars and crescents. All of these components can also be found depicted on the shields modelled on Trajan's Column, which is hardly surprising if the praetorians were the main sources for the depictions of citizen soldiers on the helical frieze. The appearance of scorpion motifs is also characteristic of praetorian shields.

Similarly, it may reasonably be asked if the blazons depicted on shields on the metopes at Adamclisi are more plausible than those on Trajan's Column, not least because military sculptors are thought to have produced them. The Adamclisi curved, rectangular shields feature right-angled shapes resembling the Greek letter *gamma* (Γ), which may denote strengtheners attached through the shield board to the underlying framework, and these can also be seen on tombstones, such as that of C. Valerius Crispus from Wiesbaden. The Adamclisi shields also display similar ansate panels by the side of the boss to those found on tombstones. The representations of blazons on the metopes at Adamclisi thus seem every bit as credible as those on contemporary tombstones.

The curved, rectangular and flat, oval shields from Dura-Europos bore just painted designs (confirming what Vegetius says: see p. 60), but it is possible that (in some instances at least) there were also decorative attachments on the face of shields. There were sound practical reasons for not doing so, however, because a smooth-painted face would help deflect glancing blows which could snag on attachments. Nevertheless, some metallic fittings from a site associated with Varus' disaster in the Teutoburg Forest in AD 9 may have belonged to representations of lightning from the front of shields. The arrow

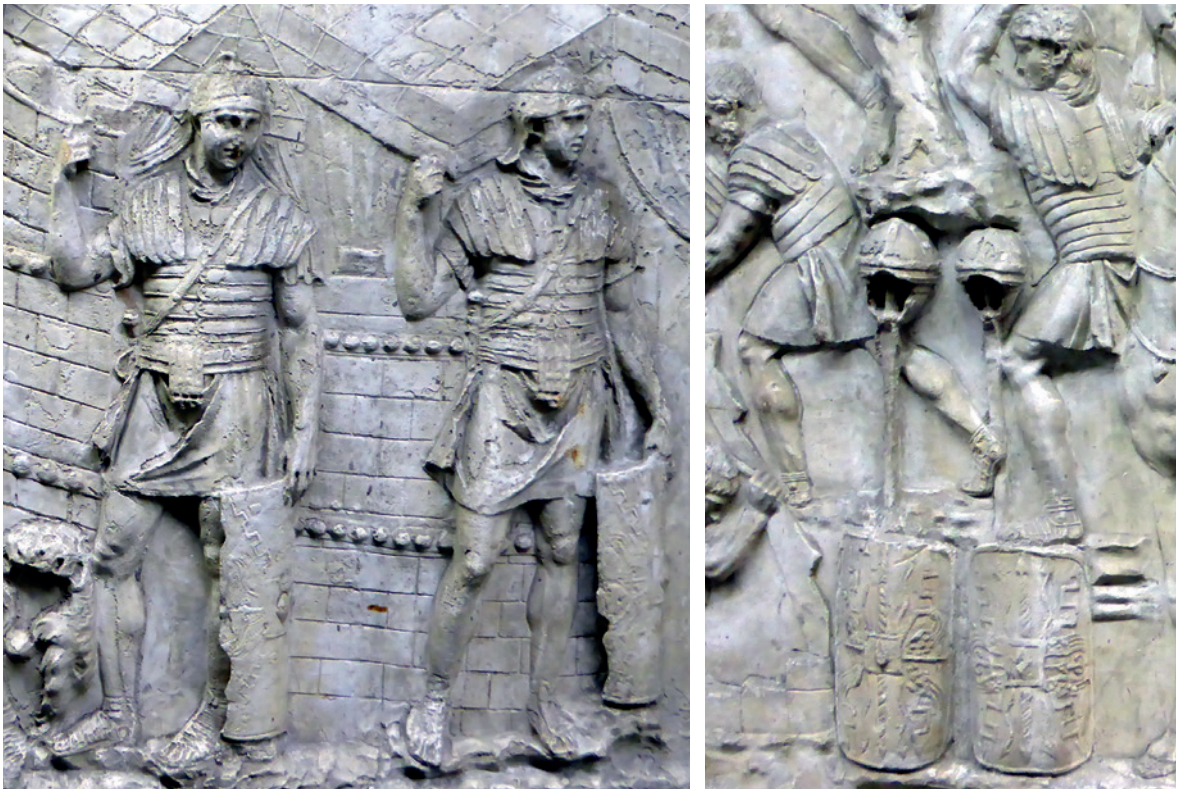
tip and right-angled dog-legs certainly resemble those depicted on shields. The Doncaster shield (see p. 32) was also found with decorative attachments. Thus the notion of their use cannot be dismissed out of hand, but there is no way of knowing whether they were ubiquitous or just favoured by certain units.

By the time the *Notitia Dignitatum* came to be compiled, traditional blazons had been replaced by more abstract designs. The first hints of this may have come as early as the beginning of the 3rd century AD at Apamea, where similar abstract designs appear on shields. Medieval and renaissance manuscript illustrations accompanying the text of the *Notitia* preserve some of these designs, complete with attributions to particular units, although opinion as to their plausibility tends to wax and wane with successive generations of scholars. In one or two cases, mosaics such as that from Piazza Armerina, or sculptural reliefs (notably one from Aquileia), suggest that, like Trajan's Column, there is at least an element of truth behind them.

Other secondary uses

In combat, the shield could make an extremely effective counterweight. Experiments with throwing the javelin show that the legionary shield was heavy enough that it could act as an extremely effective counterbalance, enabling the javelin to be thrown without a run-up and with just a single step (Bishop 2017: 45–48).

The shield might also be used to make a noise in the prelude to battle by clashing shafted weapons against it (Cassius Dio 36.49.1; Ammianus 16.12.13), serving to intimidate an opponent (Cowan 2007). Of course,



Details from the cast of Trajan's Column in the Museo della Civiltà Romana showing (left) legionaries standing guard and (right) stacks of equipment including shields. (Photos © M.C. Bishop)

Detail of Scene XXVI of the helical frieze on Trajan's Column depicting a legionary fording a river with his clothing and equipment piled in the curve of his shield. From a cast in the Museo della Civiltà Romana, EUR, Rome. (Photo © M.C. Bishop)

this was only truly effective against enemies who did not use shields and could not reciprocate in kind. The tactic could, however, be effective at scaring an opponent's horses (Plutarch, *Antony* 39.4), while hitting shields with swords could equally be employed as a sign of approval of the actions of a commander (Livy 28.19.10).

There were other uses for the shield, and Trajan's Column depicts some of these. In Scenes XII, LXVIII and CXXVIII, citizen soldiers building fortifications or clearing woodland are shown forming a stack of their equipment by placing the curved, rectangular shield upright, then attaching the helmet (presumably with the cheek-piece ties) over the front of the shield board. This may have included planting the javelin in the ground behind the shield and looping the helmet over it, but this detail is now lost in every case. It is always difficult to assess how much of this sort of detail on the helical frieze on Trajan's Column is taken from real life, but the sculptors would not only have seen the praetorians, who were based in the Castra Praetoria barracks to the north-east of Rome, but also provincial troops based in the Castra Peregrina barracks on the Caelian Hill in Rome. A similar stack (but without the javelin) is shown on the tombstone of Ares (see p. 20) so it may not be entirely the invention of the Trajan's Column sculptors.

Another use of shields shown on the helical frieze on Trajan's Column depicts a citizen soldier fording a river (Scene XXVI). He has removed his tunic, body armour, helmet and sword and is wading waist-deep through the water with those items in the curve of his shield, which he holds aloft with both hands. The practicality of expecting an entire army to do this is questionable and accounts of river crossings make no mention of such a practice, so it is possible that this is artistic extrapolation.

Hunting was a favoured pastime for Romans and was particularly popular in the Army. Hunting-scene mosaics, like that from Piazza Armerina, and reliefs depicting gladiatorial beast hunts make it clear that the shield was just as important here as it was in combat. In much the same way that a bullfighter uses the cloak as a decoy to distract a bull and take the brunt of its attack, the shield could perform a similar task for the Roman hunter while also providing them with robust protection. There is no reason to suspect that there were special 'hunting' shields employed and it seems more likely that regular battle shields were used for this purpose.

Carriage

The infantryman would normally carry his shield in action by means of the horizontal hand grip. Some re-enactors complain about the edge of the boss aperture digging into the back of the hand and pack the boss with textile or fleece to cushion it. To ease the burden of the shield when on the march, carrying straps were used, and such a strap is depicted on the marble relief from Pozzuoli showing a praetorian with a curved, oval shield. Carrying straps must presumably also have been used when cavalry shields were suspended from saddles. Fittings to attach such straps were noted on the Kasr el-Harit, Doncaster and some of the Dura-Europos shield boards. The size of shield and the position in which it was carried had an impact on the efficacy of such an arrangement, as modern reconstruction has shown: a shield worn on the back but carried too low would have repeatedly struck the calves while walking.

Boss belonging to Flavius Volusius, a member of the *equites singulares Augusti*, bearing an honorific inscription. (Photo P. Gross © Arachne)

Awards

Shields could be given to individuals as awards. At the upper end of the scale, the Emperor Augustus received a *clipeus virtutis* from the Senate in 26 BC for his services to the Roman state (see p. 6). More humble members of the military might also receive some sort of recognition for their efforts. An unusual boss belonging to Flavius Volusius, a member of Trajan's mounted personal bodyguard, the *equites singulares Augusti*, demonstrates just such an award. This boss, which is decorated with images of the gods Mars, Apollo, Hercules and Jupiter, incorporated an unusual inscription, in that it was executed in Latin formed from Greek letters.

Models

In common with some other items of equipment, shields were imitated by other artefacts such as baldric fasteners. Among the finds from Dura-Europos was a number of copper-alloy fasteners that resembled the flat, oval shields recovered from the defences (James 2004: 72 & Fig. 35, 1–13). At least one even went so far as replicating the nails attaching the boss to the shield board. Shield-shaped brooches are also known from a number of sites.

Ownership

Just as Flavius Volusius was named on his boss, other inscriptions, like that on the boss of Junius Dubitatus, illustrate how shields were the personal possessions of soldiers. The characteristic formula that included both the owner's name and that of his *turma* (for cavalry) or *centuria* (for infantry)

commander helped locate a man within the broader formation. A boss from Mainz recorded the fact that the bearer, one Verus, was a medical orderly (*capsarius*), while one from Zwammerdam (Netherlands) bore the names of four successive owners within an auxiliary cavalry unit. The identification of soldiers on shields is described by the Late Roman writer Vegetius in his epitome of earlier writers:

> But in case the soldiers at any time should stray from their comrades in the confusion of battle, different cohorts painted different emblems (*signa*) on the shields, '*digmata*' as they called them, as indeed is now done by custom. In addition, the name of the soldier was written on the front of the shield with letters, to which was added from which cohort he was and which century. (Vegetius, *DRM* 2.18)

The mistaken notion postulated by some modern-day writers – that each cohort within a legion painted their shields a different colour – appears to derive solely from John Clarke's ambiguous 1767 translation of the beginning of that passage, which he rendered as 'every cohort had its shields painted in a manner peculiar to itself' (Clarke 1767: 72).

Depictions of shields on sculpture like the Mainz pedestal reliefs, the tombstone of Cn. Musius, and the metopes at Adamclisi incorporate ansate panels to the side of the boss and it is conceivable that these may have borne the soldier's name and that of his sub-unit commander. They may not always have been painted on, as Vegetius suggests, since appliqué panels may have been used for this purpose. A copper-alloy *tabula ansata* (60mm by 30mm) was found at Gamla (Israel) alongside a range of arms and armour belonging to a Roman soldier crushed by a collapsing wall in the city. This ansate panel seems to have been attached to his shield, since it was found together with a shield reinforcement bar (Stiebel 2014: 85–86 and Fig. 4.20,66). Lucius Magus may have been a *miles* with *legio V Macedonica*, which was recorded as attacking this sector of Gamla. The panel bore punched (*punctim*) lettering recording the man's name but also that of two centurions, Musus and Gallus, suggesting a change in officer during his period of service. Coincidentally, the only centurion mentioned by Josephus in connection with the siege of Gamla was called Gallus. A similar plate is known from Kirkby Thore (England) which may have come from a shield belonging to Itosus in the century of Priscus (*RIB* 2427.18).

The fact that soldiers owned their equipment meant there were a number of consequences. First, they had to buy items from the Army when they enlisted, which meant there were regular deductions from their pay to cover the cost, as was true for all of their equipment. Forcing soldiers to own their equipment had some benefits for the Army, because it may have been thought that they would be less likely to discard property in battle or sell it off. Whether this was actually true or not is debatable. Roman military law was very clear on what should happen if they did so, and a section of Julius Paulus' treatise from the early 3rd century AD on military punishments is preserved in Justinian's *Digest*:

> It is a serious crime for a soldier to sell his arms, and it is considered equivalent to desertion if he disposes of all of them, but if he only

> sells a portion, his punishment will depend upon what he sold. For if he sells the armour for his legs or shoulders, he shall be punished by scourging; if, however, he sells his body armour, his shield, his helmet, or his sword, it is as if he is a deserter. (Justinian, *Digest* 49.14.4.1)

It is evident that there were legal ways of disposing of equipment, however. A plaque from Tongeren (Belgium) records a centurion of *legio III Augusta* dedicating a shield and a javelin to the goddess Vinhansa (*CIL* XIII, 3592). It is possible that this may have been a privilege of rank, but it seems more likely that anybody wishing to dedicate weaponry or equipment to a deity had to first purchase a replacement (either for use or as the actual offering).

Legacy

Both the *aspis*/*clipeus* and the curved, rectangular *scutum* are still with us. Look through any catalogue of modern riot shields, and their forms (and indeed sizes) are instantly recognizable. They are now made of polycarbonate, and usually at least partly transparent, but there is still a place for the convex, round shield and the curved, rectangular body shield, although both now use the hoplite-style grip, rather than a central hand grip. Even so, the form of the shield continues to dictate the manner of its use: much has been made of the use of a ragged form of the *testudo* shield formation by riot police during the Euromaidan protests in Kiev in 2013–14 (Ingersoll 2014), but far from being derived from ancient tactical manuals, this was mainly a product of the size, shape and versatility of the shield in use.

Curved, rectangular polycarbonate riot shield in use by French riot police. (Edward Crawford/SOPA Images/ LightRocket via Getty Images)

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References to illustrations are shown in **bold**. Plates are shown with page locators in parentheses.

OSPREY PUBLISHING
Bloomsbury Publishing Plc
Kemp House, Chawley Park, Cumnor Hill, Oxford OX2 9PH, UK
1385 Broadway, 5th Floor, New York, NY 10018, USA
E-mail: info@ospreypublishing.com
www.ospreypublishing.com

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First published in Great Britain in 2020
This electronic edition published in 2020 by Bloomsbury Publishing Plc

A catalogue record for this book is available from the British Library.

ISBN: PB 9781472839626; eBook 9781472839633;
ePDF 9781472839602; XML 9781472839619

Editor: Nick Reynolds
Index by Rob Munro
Typeset by PDQ Digital Media Solutions, Bungay, UK

Osprey Publishing supports the Woodland Trust, the UK's leading woodland conservation charity.

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Acknowledgements

One of the pleasures of writing any book is acknowledging the assistance that others have provided during its composition. As ever, I am particularly grateful to my friend and colleague, Dr Jon Coulston of the University of St Andrews, for free rein to use his superb range of photographs, as well as for reading and commenting upon a preliminary draft of this book. Dr Raffaele D'Amato very kindly allowed me to reproduce one of his photographs of the Kasr el-Harit shield. I would also like to thank Holger von Grawert and Philip Gross for unstinting help with securing photographs of material in private collections. Dr Stefan Burmeister of VARUSSCHLACHT im Osnabrücker Land GmbH also helped with illustrations, as did Megan Doyon at Yale University Art Gallery, while Chris Haines of the Ermine Street Guard allowed me to run riot through their equipment store and photograph one of their signature shields. Thanks are also due to Richard Beleson and Jasper Oorthuys for assistance sourcing illustrations. Finally, I feel that without the quiet, practical wisdom of Dr David Sim, manifested in his ingenious pilum- and shield-testing rig, this book would be a lesser thing.

Title page: A bireme from the time of the battle of Actium (31 BC) manned by Roman marines carrying curved, oval shields. (DEA PICTURE LIBRARY/ De Agostini via Getty Images)

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