

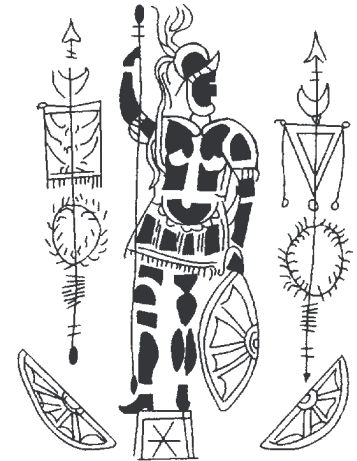
ARMA

NEWSLETTER OF THE ROMAN MILITARY EQUIPMENT CONFERENCE

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EDITORIAL

Shortly after you receive this, the first volume of *JRMES* will make its appearance. It has been deliberately priced so as to be cheaper for **ARMA** subscribers, but this means that the profit margins are very low, and much depends upon its success. The two publications will be complementary, although very different in nature: the newsletter produced rapidly and specialising in brief reports, the journal on coated paper, with sewn pages and a laminated cover, providing a forum for longer and more detailed papers.

A natural progression for **ARMA** (which, you will have noted, has acquired an ISSN) would now be into a four-sheet, centre-stapled publication, although I have yet to find a favourable price for this particular option, and it would mean that it could no longer be slotted into a ring-binder. After earlier gloom over contributions, the response for this issue has been encouraging; in the hope that it continues, more space will be gained in future by only printing the subscriber list in December issues.

Meanwhile, **ARMA** enters its third year at the same price as it began — in fact, if you take advantage of the special three-year subscription offer (p.18), you can get it even cheaper than before!

THE FACE OF BATTLE

Readers of **ARMA** might be interested in a course being run by Dr Brian Dobson at Durham University. Entitled 'The Face of Battle: The Roman Army', the course will study 'The roles in battle of light and heavy infantry, cavalry, archers, slingers, other missile-users and artillery, from late Hellenistic, Republic, Early and Late Empire'. Amongst other things, the use of military equipment will be discussed and contributors will include Peter Connolly. The course runs from March 16th to 22nd at St. Aidan's College, Durham. The cost will be £45.00 for the course fee, accommodation £138.00. For further details, contact Dr Brian Dobson, 32 Old Elvet, Durham, DH1 3HN (Tel: Durham 3743724).

SPECIAL OFFER SUBSCRIPTIONS

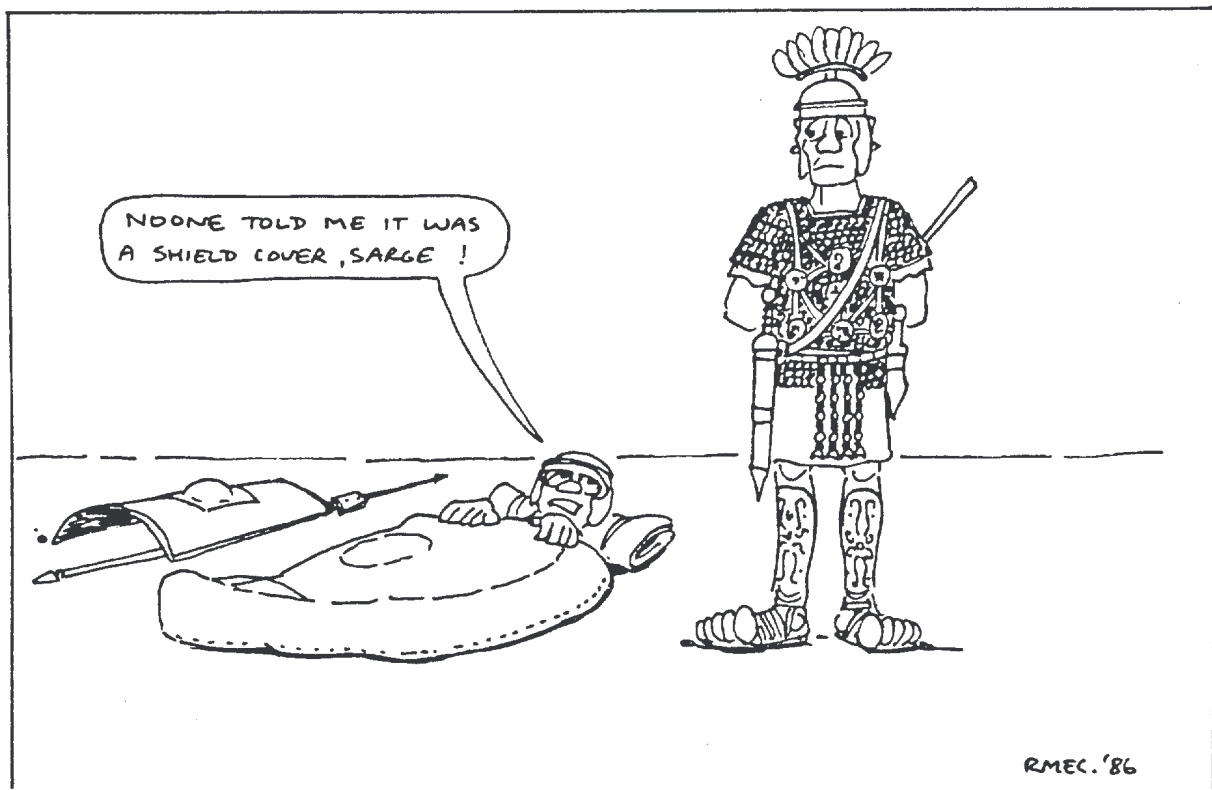
It has been pointed out that it would be both easier for me and for subscribers if the annual round of subscription demands could be rationalised, and to this end **ARMA** is introducing a new three-yearly subscription: subscribe now for 1991-3 inclusive at a cost of only £10.00. I ought not to need to point out the benefits of this scheme (immediate saving of 50p,

reduced bank charges for continental subscribers, avoids any price rises during this period). More details on the enclosed subscription renewal form.

SOME NEW EQUIPMENT FROM GERMANY

A number of references have now appeared to the supposed site of the Teutoburger Wald disaster and a photograph published in *Military Illustrated* reveals some of the items recovered. Metal detector examination by Capt. Tony Clunn of the Royal Army Medical Corps discovered the site with his metal detector and subsequent archaeological work has been undertaken by Dr W. Schlüter of Osnabrück Museum. The finds from what may well be a new Augstan base include a face mask from a cavalry sports helmet, a *dolabra*, a phallic pendant, some scales of *lorica squamata*, a buckle (complete with tongue) of typical first century A.D. form, and a cart mount (along with coins, brooches, and a lead weight). The photograph suggests that the material is very well preserved.

Source: *Military Illustrated* No.29 October 1990, 4 (figure)



Neil '86

THE ROMAN FINDS GROUP

The Roman Finds Group met in the Archaeology Annexe of the University of Newcastle upon Tyne on 24th September 1990 and a number of papers that will be of interest to **ARMA** readers were presented. Lindsay Allason-Jones talked about the small finds from Elginhaugh (having dealt with just the military finds at the 1990 ROMECE). Philip Cracknell discussed enamelled belt mounts of the 2nd and 3rd centuries (see **ARMA** 1:2, 27), whilst Pat Price illustrated an extremely elaborate openwork belt plate recently found in London. Sue Winterbottom showed how the recent discovery of the Vindolanda tent (see van Driel-Murray in *JRMES* 1) had influenced her study of tent leather from Carlisle, graphically illustrating just how much they now had from this important site. Finally, your editor discussed the problems inherent in dealing with unstratified assemblages, taking the military equipment from Corbridge as an example. The Roman Finds Group is also planning an international conference for 20th-22nd September 1991, entitled '*Finds from the Imperial West*'. Further details on this and other aspects of the RFG are available from: Patrick Clay, Roman Finds Group, Museums Annexe, 116 Humbersone Drive, LEICESTER, LE5 0RD, England.

SLIDES AND POSTERS

Those of you who like to add to your slide collections may be interested in some offerings by Michael Simkins of various pieces of reconstruction equipment he has produced over the years. The slides cost £1.20 each and, thanks to the wonders of modern technology, these can also be produced as A3-sized posters (by laser colour photocopying), and these cost £4.00 each. Michael Simkins can be contacted at: 9a Priory Road, West Bridgford, Nottingham, NG2 5HU, England.

Coolus E helmet with centurion's cresting – front $\frac{3}{4}$
Coolus E helmet with centurion's cresting – rear $\frac{3}{4}$
Imperial Gallic F helmet with crest – front $\frac{3}{4}$
Imperial Gallic F helmet with crest – rear $\frac{3}{4}$
Imperial Gallic F helmet with crest – rear
Imperial Gallic F helmet without crest – front $\frac{3}{4}$
Imperial Gallic F helmet without crest – rear $\frac{3}{4}$
Imperial Gallic F helmet without crest – side
Imperial Gallic F helmet without crest – front
Imperial Gallic I helmet crested and plumed – front $\frac{3}{4}$ (x2)
Imperial Gallic I helmet crested and plumed – rear $\frac{3}{4}$ (x2)
Imperial Gallic I helmet crested and plumed – sides (x2)
Imperial Gallic J helmet crested – front $\frac{3}{4}$ (x2)

Imperial Gallic J helmet crested – side
Imperial Gallic J helmet crested – rear $\frac{3}{4}$
Imperial Gallic J helmet without crest, showing probably crest stand – front $\frac{3}{4}$
Romano-Sassanian (August) helmet – front $\frac{3}{4}$
Romano-Sassanian (August) helmet – rear
Romano-Sassanian (August) helmet – side, with belt and baldric
Newstead Hippika Gymnasia skull-piece – rear $\frac{3}{4}$ (x2)
Newstead Hippika Gymnasia skull-piece – internal
Ribchester Hippika Gymnasia helmet – various angles (x6, 1 with crest)
Northwich cavalry A helmet skull, Carlisle cheek skinning – front $\frac{3}{4}$
Northwich cavalry A helmet skull, Carlisle cheek skinning – rear $\frac{3}{4}$
Northwich cavalry A helmet skull, Carlisle cheek skinning – side
Northwich cavalry A helmet skull, Carlisle cheek skinning – rear
Hypothetical cavalry A helmet with Nijmegen brow plate and Yrendoorn cheek guard with embossed figure of Mars – side
Hypothetical cavalry A helmet with Nijmegen brow plate and Yrendoorn cheek guard with embossed figure of Mars – rear
Koblenz-Bubenheim cavalry B helmet skull, Heddernheim cheek guard – front $\frac{3}{4}$ (x2)
Koblenz-Bubenheim cavalry B helmet skull, Heddernheim cheek guard – rear $\frac{3}{4}$ (x2)
Hypothetical cavalry B skull-piece with Pegasus cheek guards (Spain) – front $\frac{3}{4}$
Cavalry E helmet based on Heddernheim specimen – front $\frac{3}{4}$
Romano-Sassanian cavalry helmet with hide pipings (Burgh Castle) – front
Romano-Sassanian cavalry helmet with hide pipings (Burgh Castle) – front $\frac{3}{4}$
Romano-Sassanian cavalry helmet with hide pipings (Burgh Castle) – rear $\frac{3}{4}$
Mainz Augustan sword and scabbard – sword drawn
Mainz Augustan sword and scabbard – sword sheathed
Fulham pattern sword and scabbard – sword drawn
Fulham pattern sword and scabbard – sword sheathed
Pompeii pattern sword and scabbard – sword drawn
Pompeii pattern sword and scabbard – locket close-up
Pompeii pattern sword and scabbard – chape close-up

LIMESRITT 90: CONTINUING EXPERIMENTS WITH THE ROMAN SADDLE

Dan Peterson

The 1990 Limes ride of Dr Marcus Junkelmann and his Ala Secunda Flavia, mentioned in earlier issues of **ARMA**, met a successful end with four

horses and riders entering Aalen on 14 October 1990.

The march began at Leiden on 12 September, as the original British portion had been postponed (likely to be rescheduled for the summer of 1991). The first two weeks (Holland and North Germany) were predominantly marched on asphalt and concrete surfaces in a landscape much changed from the Roman period. Highlights of the first phase were a tour of the museum and excavations at Nijmegen and a public display at the Roman reconstructions at Xanten, where the riders were joined by a detachment of legionaries from the Gemina Project based in the Netherlands. Both the infantry and cavalry were treated to an authentic Roman bath in Xanten's recently completed *Mansio* reconstruction.

The most interesting part of the ride was the second two weeks, beginning at Rheinbrohl, where the riders left the Rhine line and followed the original track of the Limes. At times this was a great challenge, as the path was often unmarked and nearly impassable due to last year's terrific storms which littered the German forests with thousands of fallen trees. Dr Junkelmann had fortuitously equipped himself with 'long reins' to lead his horse from behind, as depicted on some Roman tombstones. This came in extremely handy when pushing through the dense underbrush dismounted. Detours led to some interesting situations, as on one occasion, leading his horse over a long abandoned footbridge, Dr Junkelmann's horse crashed through the rotted timbers, and barely made it to terra firma. We had to 'rebuild' the bridge with scrap wood at a nearby farm in order to get my horse across.

The march often exceeded 40 kilometres a day, much of it on foot as the terrain was too rough to ride. As with the 1988 Limes ride, each night was spent under Roman leather tentage, and rations were limited to 'Roman-type' foods. The most disappointing feature of the march was that a pack saddle had not yet been perfected, and each day the camp equipment was moved by modern conveyances.

While the very thorough survey of the Limes by foot and horseback was, alone, well worth the effort, unquestionably, this was also the most intensive test of Roman saddle prototypes yet undertaken. Flaws in earlier saddle reconstructions discovered in the two earlier rides were now perfected, and two very plausible saddle types have now emerged.

On the Limesritt 1988 I used the Connolly designed saddle, now well publicised. It served well, but was fairly fragile in its construction, and the tree was already broken before I began riding it. It was decidedly unpopular among most of our riders due to the large, very rigid horns, which created difficulties

when mounting (on a live horse at least), and more important, the difficulty in immediately dismounting in case of a fall. Much easier to mount was the completely treeless 'cushion saddles' also used during the march. Without any support though, these tended to chafe the horses' backs, (though contrary to some evil rumours, no horses on any of the rides were severely, or permanently injured by this saddle). Though these early attempts were not too successful, the entirely treeless saddle is still plausible, as we recently discovered a treeless military saddle of 19th century design very similar to the Roman saddle in basic configuration.

During the 1989 Italian ride, a local Tuscan saddle was examined. Save for two simple wooden ribs, it also lacked a rigid tree. Dr Junkelmann was of the opinion that the Roman saddle probably did not have a wooden tree, as the surviving bronze horns generally show no evidence of being nailed to a wooden frame, the omnipresent rows of tiny holes being more likely for stitching into leather. Furthermore, as demonstrated in the first cushion saddle prototypes versus the completely rigid Connolly saddle, horns that 'gave' a bit allowed just as secure a seat, but did allow for quicker and easier mounting and dismounting.

A second type of saddle was also discussed in Italy, and reached fruition by Limes Ride 90. Though Dr Junkelmann and I both rode Roman saddle prototypes exclusively during all three rides to date, the most popular saddle among the other riders were the Carmargue type. All of the riders possessed these saddles, as they were the 'traditional' saddle used with the Carmargue horse (which is the only breed we have used in these experiments). The Carmargue saddle is similar in appearance to some medieval saddles, possessing a high pommel and cantle, and when used without stirrups, has been the best substitute for a Roman saddle found so far. Because of this saddle's popularity, and its possible link to antiquity in its southern French origins, Ludwig Pfau, the last veteran of all three rides, decided to build a 'Roman' saddle on the robust and comfortable Carmargue tree. I negotiated a trade for the yet unbuilt prototype, furnishing the leather and bronze horns, the latter based on the rather large original set excavated at Rottweil. I used this saddle exclusively during Limes Ride 90, though missed the first, 'Holland' week, due to a museum conference in the USA.

Both the 'Tuscan' and 'Carmargue' Roman saddle prototypes served extremely well during the rigours of the march. Neither type caused the horses back sores, nor did the saddles suffer any structural damage during the ride. Of the two, Junkelmann's

'Tuscan' model might be considered slightly superior due to the ease of mounting and dismounting afforded by the slightly flexible saddle horns. Indeed, one rider referred to my rigid horn saddle as a 'suicide seat' due to the difficulty in 'bailing out' quickly if the horse went for a tumble.

The success of these saddles on Limes Ride 90 will mean that all future saddles in the Ala reconstruction group will probably be based on either of these models. Hopefully, by next year's major ride, all participants will be equipped with a 'Roman' saddle based on one of these two designs. The only modification to the 'Tuscan' type saddle horns to provide a more comfortable seat. On the rigid tree 'Carmargue' type, reconstructions of original Roman horns smaller than the rather largish Rottweil examples could be incorporated. This would allow for just as secure a seat, but would make mounting and dismounting much easier.

Though I am the proud possessor of the successful rigid tree Roman saddle prototypes, I am inclined to support the theory that Roman saddle horns were not an integral part of a rigid tree. This is based both on the success of Dr Junkelmann's essentially treeless Tuscan saddle reconstruction, and the fact that the many surviving Roman bronze horns give no indication in their construction of being firmly attached to a wooden tree. In fact, if saddle horns were the extension of a wooden tree, there would be no point in making them from bronze!

It is possible that there was a number of different Roman saddles based on location and purpose. For example, a very rigid, high-horned tree may have been a requirement for the saddles used by cataphracts, much like a medieval 'war' saddle. As it has been my plan for some time to construct the complete armour and equipment of a cataphract, I believe my present rigid tree saddle would serve very well in this capacity. Hopefully this equipment will be completed in time for the projected 1991 British ride.

In conclusion, I think it is worth mentioning again that both of the successful Roman saddle prototypes utilized in Limes Ride 90 were based on 'old' saddles native to Italy and southern France. One wonders if not both of these designs could have been based on Roman saddles, which centuries before would have been common in these regions.

Readers who have been interested in Dan Peterson's description of the 'top-downwards' design of a Roman saddle reconstruction, may like to know the latest about the 'bottom-upwards' (excuse the pun) approach to the evidence: Peter Connolly and Carol van Driel-Murray have a paper forthcoming in the

journal Britannia on the evidence for, and their reconstruction of, the Roman saddle.

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DOWN TO EARTH: A NOTE ON BOLT-HEADS AND RAKE-PRONGS

W.J.H. Willems

In a recent publication (WILLEMS 1989), I discussed a late-Roman weapon-grave from a Gallo-Roman villa at Voerendaal in the Netherlands. The burial contained several weapons such as a spear-head, an arrowhead, a large knife and 11 bolt-heads (Fig.1). For this reason, the paper was included in the proceedings of the Fifth Roman Military Equipment Conference, although my interpretation of the burial was that it was not the grave of a soldier but a rather late example of a grave of a wealthy Gallo-Roman villa owner. Such burials frequently contain (hunting-) weapons which functioned as high-status grave goods. Nevertheless, the presence of the alleged bolt-heads was very surprising. I assumed that the presence of these primarily military objects provided indirect archaeological evidence for the crossbows known from two Gallo-Roman reliefs with hunting scenes. They appeared to be arranged in the grave rather carefully: not in a bundle but placed 5-6 in an alternating opposed direction (WILLEMS 1989, Fig.6).

Some time after publication, I received a letter from Dr D Baatz from the Saalburgmuseum, who expressed serious doubts about my identification of

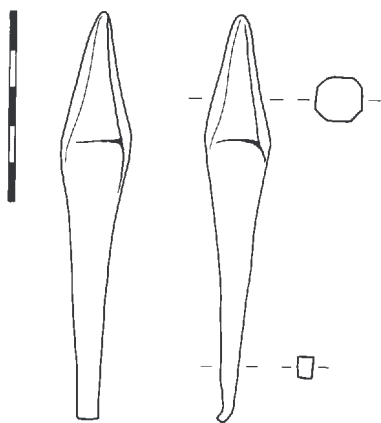


Fig.1 Iron rake prong from the Voerendaal burial, after WILLEMS 1989. Scale in cm.

the objects. Some of the illustrated 'bolt-heads' were somewhat asymmetrical (even more than the drawn specimen from Fig.1). Although the extensive corrosion of the objects makes an evaluation of their precise shape after conservation problematical, a re-examination has convinced me that Dr Baatz' scepticism was entirely justified: several are too

asymmetrical to attribute this to corrosion or to the conservation process. That, of course, rules out a use as bolt-head. In fact, the objects may be reinterpreted in a completely different way, namely as rake prongs. Conclusive evidence for this new interpretation is the fact that several of the iron points have bent tangs, a phenomenon which I found difficult to explain in my original description of the grave goods (p.151), but which has now become obvious.

Fig.2 illustrates a complete rake from the Saalburg as illustrated in the original publication (JACOBI 1897, 444, Fig.69.1). It consists of a

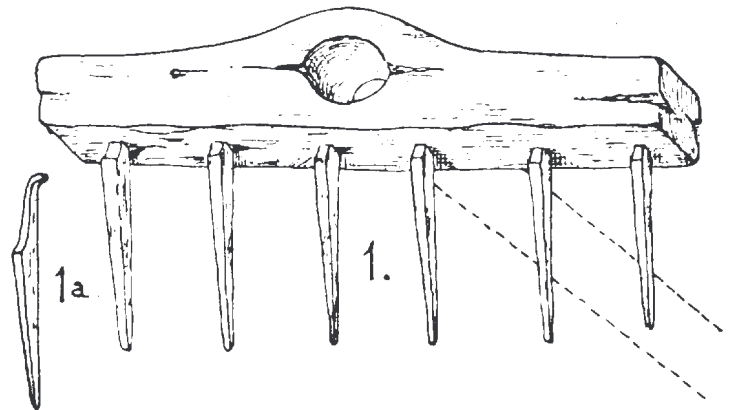


Fig.2 Wooden rake with iron prongs from the Saalburg, after JACOBI 1897. Scale c.1:4.

wooden beam with six iron prongs of a very characteristic shape which is described by Manning (1985, 59) as follows: 'a slightly curved, tapering stem is topped by a tang which has a distinct step on one side at its junction with the stem. In use the tang passed through the clog (or beam) to be hammered over the back of it.' The Voerendaal specimens differ quite a bit from this typical shape, which is known from various sites, including military sites such as the Saalburg and Newstead. Several recent studies of iron tools (e.g. POHANKA 1986, 102-106 'Zinkenhausen' and PIETSCH 1983, 72 'Karstzinken') offer overviews of these finds, although rake prongs which resemble those from Voerendaal appear to be exceptional.

Fortunately, the interpretation of the Voerendaal burial as that of a villa owner need not be changed, indeed it has received further confirmation by the exposure of the 'carefully arranged' bolt-heads as the remains of two rakes. Their presence in the grave is, by the way, as exceptional as the bolt-heads would have been. Agricultural tools in burials are quite rare. An interesting parallel is a late-Roman grave from Rodenkirchen in Germany (HABEREY 1949) with a large number of bronze miniature tools, including a

rake.

The fact that prongs are quite common in both military and civilian contexts suggests that there may have been more cases where prongs of the Voerendaal type have been misinterpreted as bolt-heads. In any case, bolt heads with bent-tangs should henceforth be regarded with extreme suspicion even if they are perfectly symmetrical. There is, after all, a big difference between the presence of artillery and that of a gardener!

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THE MANICA LAMMINATA

Michael Simkins

One item of military and gladiatorial equipment which has caused some difference of opinion amongst students of armour, over the years since serious investigation of Roman arms began, is the laminated plate arm defence, or *manica lamminata*.*

Representations of defences, particularly in mosaics depicting gladiatorial scenes, and fragments of actual specimens from two sites of a military context, show that they were constructed from lames

of either iron or bronze. Both the patterns of 'civil' and military use doubtless had their lames joined vertically by internal strips of hide, most probably goat, in a similar manner to leathering already encountered in the laminated cuirasses, since to attach the lames to a complete sleeve of thin hide would, judging by more recent attempts, have proved weak; the lames tearing themselves away from the leather foundation at a point where any considerable movement was necessary.

However, *manicae* for military and gladiatorial use appear to have little, if anything else in common; the military examples encircling the wearer's arm to about only two thirds of its circumference, whilst the depictions of the gladiatorial patterns show lames which close completely about the arm and were apparently fastened with leather ties in some cases.

The reason for this major difference may be attributed to the fact that a complete encirclement of lames produces a measure of restriction, as yet not fully determined by experiment, at the elbow. One is apt to assume, in the light of our present knowledge, that such an impediment to flexion of the arm was found to be unacceptable to the army, even if it was permissible in the arena.

Identification of *manica* lames may be achieved by noting the different angles to which the ends of the lames have been cut; those of the upper arm being less acute than those of the forearm. This difference is most clearly apparent with the fragments found at Carnuntum,¹ where the end of an upper-arm lame contrasts sharply with a pair from the forearm.

The multiple fragments of one, or possibly more than one, bronze *manica*, from Trimontium (Newsstead), previously identified as remains of a thigh-guard, are less definite in their differences of angularity; however, they do conform reasonably well to the requirements for a *manica* and appear to provide a clue to the means by which a lining could have been attached. Any internal lining or sleeve of hide or fabric obviously had to be well-secured to the ends of the lames, which was no doubt the purpose of the holes punched centrally, close to the angles' extremities. Precisely how the the lining was attached, is impossible to determine with certainty at this time; however, short lengths of thong passed through pairs of the lames and the lining and then knotted on the outside would seem appropriate, rather than passing the thongs over the ends of the lames, which would render them liable to rapid damage from the metal edges. The whole would then presumably have been fastened about the arm by means of lacing, or straps and buckles.

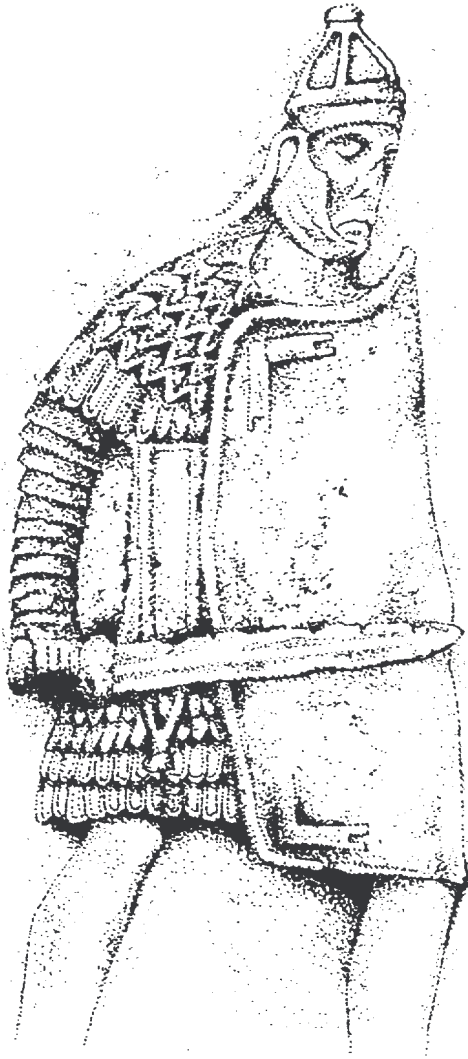


Fig.1 A legionary infantryman from the Adamklissi Monument, showing a manica lamminata with body defences of 'pteruges' and a corselet of scale.

Should such a method of securing the lining to the lames have been employed, then it would clearly have been necessary to avoid attaching it at the elbow, where maximum flexion was required and the thongs would have interfered with the motion of the lames. In this regard, it is interesting to note that three of the lame endings from the Trimontium site have no such punched holes and may therefore possibly have been located at the elbow of the defence(s) to which they originally belonged.

The appearance of complete *manicae* of military pattern is shown in sculpture to have varied. The examples portrayed on the Trajanic monument at Adamklissi, commemorating that Emperor's victories over the Dacians, terminate at the wrist and, contrary to the find evidence, have their lames overlapping downwards. An alternative pattern is represented, however crudely, on the border of the

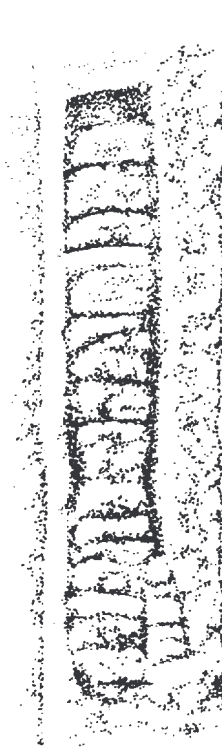


Fig.2 The crude representation of a manica laminata from the border of the grave stele of the legionary infantryman Sextus Valerius Severus. The arm-guard appears to show complete coverage of the fingers and thumb of its owner.

grave stele of the legionary infantryman Sextus Valerius Severus,² who served with Legio XXII Primigenia. This single example shows a *manica* which not only had lames which extended over the hand, but apparently included separate plates for the thumb.

Another example which shows a departure from the majority of arm defences, though in this case a gladiatorial one, occurs on a figure of a *retiarius*, portrayed on part of a relief which originally stood near to the amphitheatre in Chester, now in the Saffron Walden Museum.³ The *manica* of 'The Chester Gladiator' as the figure is known, shows considerably broader lames than usual and what appears to be a couter plate at the elbow with narrow lames passing over the inside of the arm.

The apparent difference in the breadth of the lames, when compared to all the other representa-

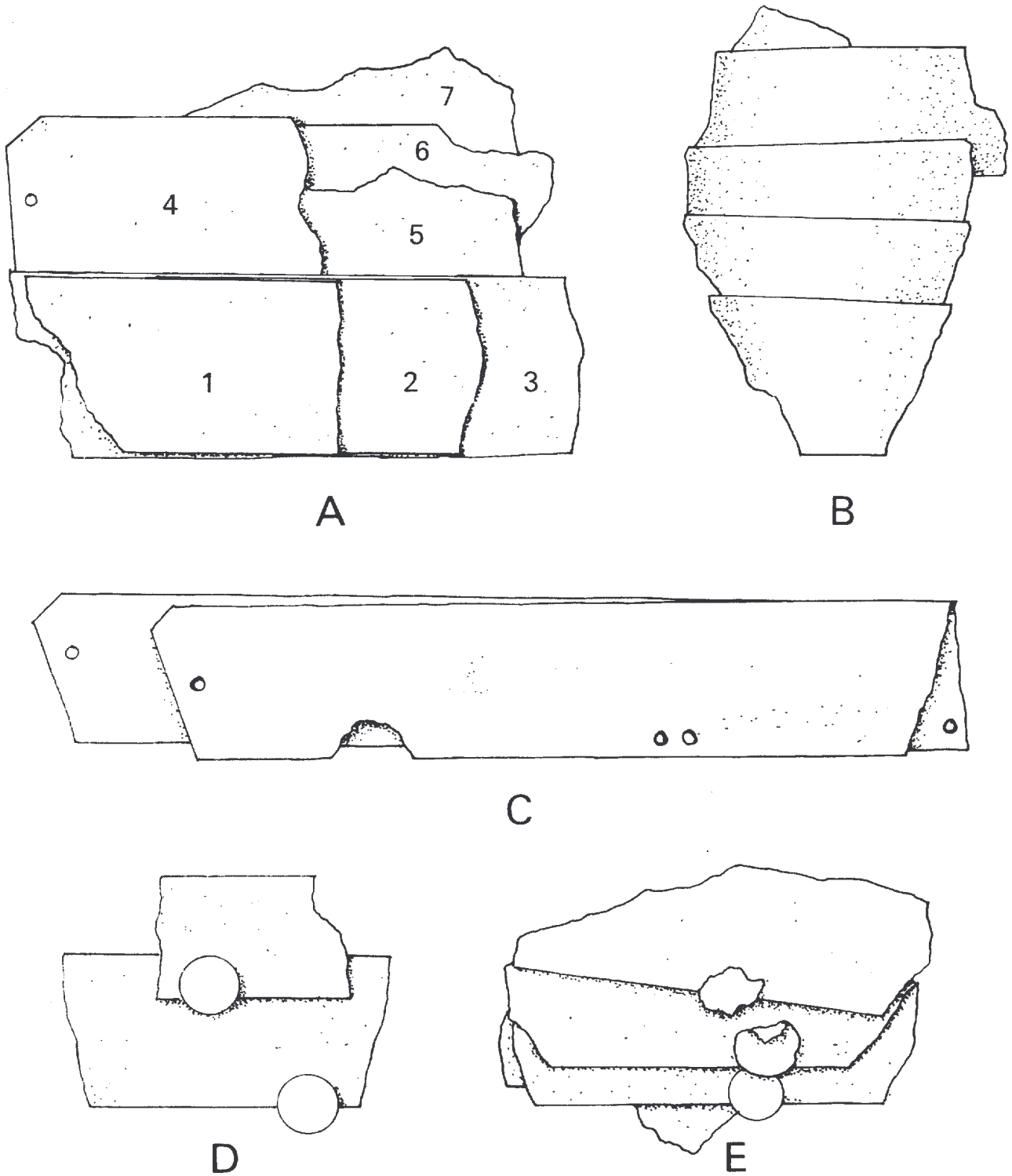


Fig.3: Fragments of iron manicae lamminatae found at Carnuntum. Plate 4 of group 'A' is probably from the upper arm, the plates of group 'C' from the forearm. Redrawn after von Groller (scale 1:1).

tions, may have provided a reason for the inclusion of a couter, for lames of such a breadth would very surely have worsened the restrictiveness of the narrow lame pattern.

Unfortunately there are to date no known examples of gladiatorial defences of the kind, or fragments of them, which would serve to confirm the informa-

tion derived from the sculptural and other iconographic sources, despite the very considerable quantity of surviving helmets and other elements of gladiatorial armour.

1. Von Groller, *Der römische Limes in Österreich II*, 1899, p.115-6, Taf.XX,6-10.

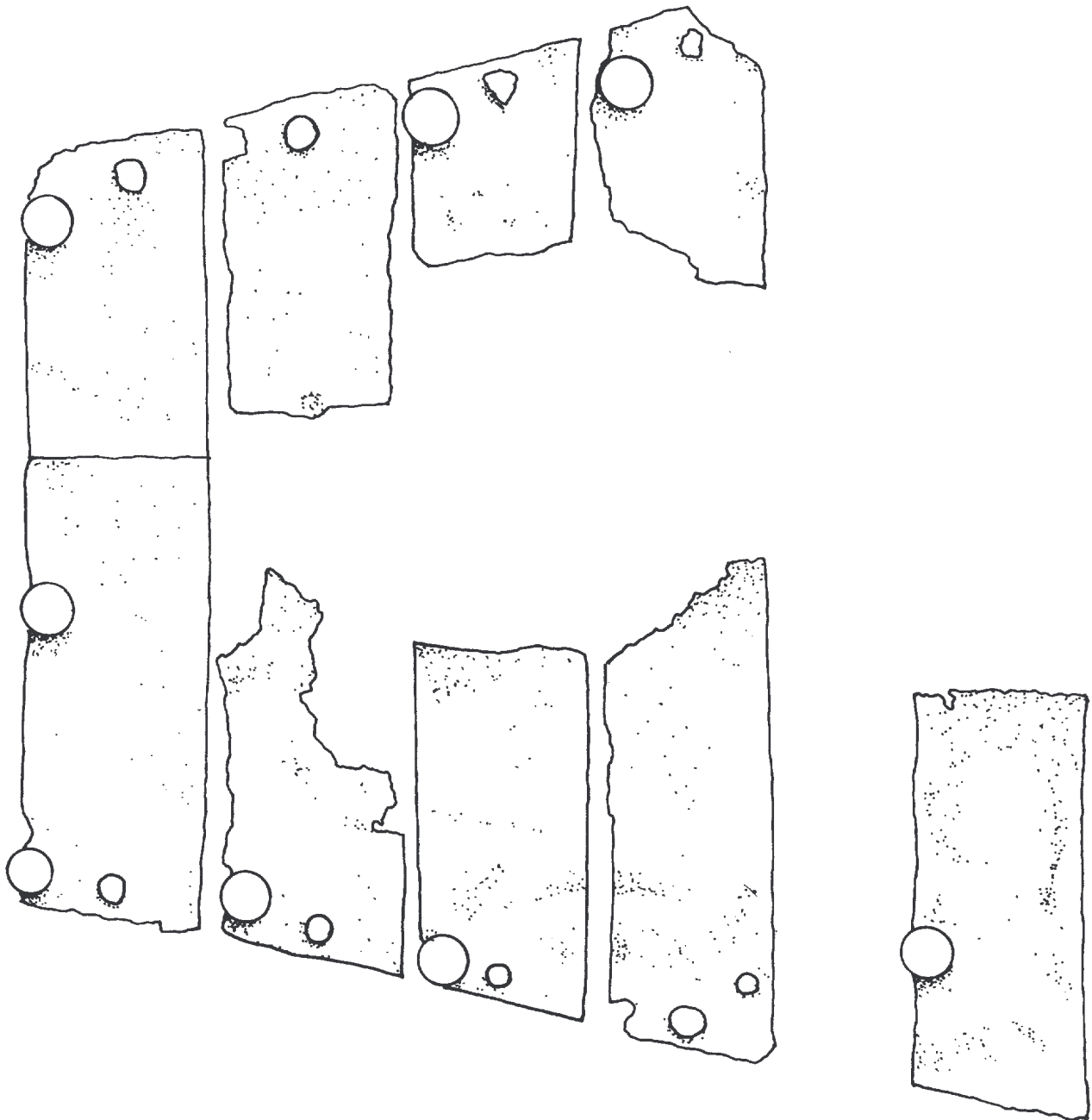


Fig.4 Fragments of bronze forearm lames from Trimontium. The fragment without a punched hole was probably positioned at or near the elbow (scale 1:1).

2. W. Selzer, *Römische Steindenkmäler. Mainz in römische Zeit*, 1988.
3. R. Jackson, 'The Chester Gladiator rediscovered', *Britannia* XIV, 1983.

* Note. The author is indebted to the Editor for identifying the sole instance of the use of the word *lamminis* in relation to iron plate armour: Tacitus, *The Annals of Imperial Rome* III,45. The use of the adjective *lamminata* is presumed by the author and not supported by any other reference.

MILITARY EQUIPMENT FROM ROMANO-BRITISH CAVES

Martin J. Dearne

As a result of a wider project to assess the extent and nature of Romano-British cave usage undertaken by Prof K. Branigan and the author a number of pieces of military equipment have been identified from cave sites. Many caves have produced what are probably civilian weapons, particularly spears and

poorly recorded antiquarian work often refers to 'daggers', 'sheath bindings', 'strap ends' and even 'sword handles'. these items need not be military but may suggest that the definite items of equipment do not represent the whole story (though note that the items claimed for Kent's Cavern by Pearce (1974) cannot be substantiated).

The certain finds are:

- i) Openwork buckle from Poole's Cavern, nr. Buxton, Derbyshire (BRANIGAN & BAYLEY 1989, No.63 and Fig.3 but not fully identified therein. Now in the site museum).
- ii) Rather small openwork mount (Fig.1) from Greater Kelco Cave, N. Yorks. (SMITH 1844 plate 26, No.5 though wrongly labelled. Formerly in the British Museum and now missing. Sometimes erroneously attributed to other caves). For parallels cf. particularly Allason-Jones (1988, No.52a.3).

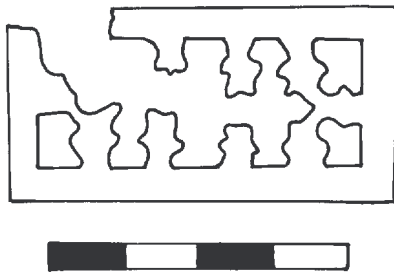


Fig.1 (scale 1:1)

- iii) *Lorica segmentata* buckle (Fig.2) with double hinged plate (known only from photograph in Jackson and Mattinson (1932) and now either lost or in private hands) from Kinsey Cave, Giggleswick, N. Yorks. The taper of the hinged plates here is interesting and might suggest comparison with Danubian lobate ended forms (e.g. BISHOP 1987, Fig.9, No.8).

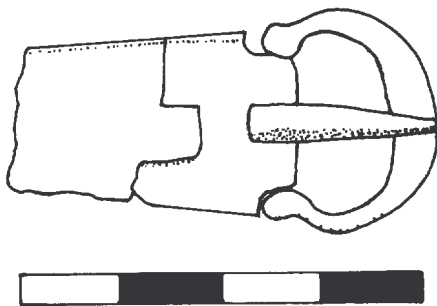


Fig.2 (scale 1:1)

- iv) Two iron arrowheads of the barbed and tanged triple ribbed form in use by the army from long

before the conquest to the later second century (cf. Manning 1985, Type II; Davies 1976) from Minchin Hole Cave, Gower Peninsula, S. Wales (BRANIGAN *et al.* forthcoming, Nos.5.5-5.6. In the institute of S. Wales, Swansea).

Certain other finds are also worth noting. Button and loop fasteners were clearly popular with the military even if of civilian manufacture and also worn by civilians (WILD 1970, 146). The following are known from caves:

- i) Poole's Cavern (BRANIGAN & BAYLEY 1989, No.62 and Fig.3). Triangular loop only.
- ii) Dog Holes, Warton Crag, nr. Carnforth, Lancashire (in Lancaster Museum) Wild (1970) type Va.
- iii) Dowkerbottom Hole, Kilnsey, N. Yorks. (in British Museum '57 11-13.13) aberrant form (Fig.3).

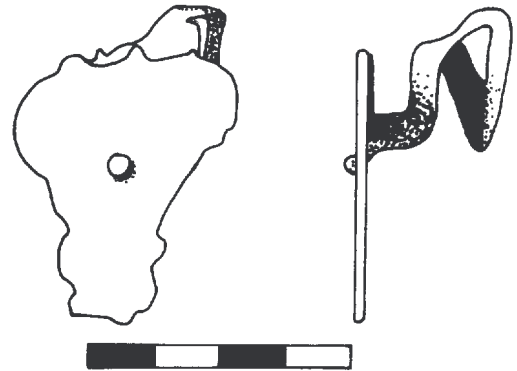


Fig.3 (scale 1:1)

- iv) and v) Ogof-yr-Esgyrn, Brecknock, S. Wales. Wild (1970) type Va (Boon in MASON 1968, Fig.11, No.7) and variant of type VI with the button being an elongated rectangular bar with three horizontal grooves (in National Museum of Wales, Cardiff).

Also notable are the finds from Sewell's Cave, Settle, N. Yorks. (RAISTRICK 1936) which includes a bolt head, an iron plate suggested (dubiously) as an iron scale and two swords (op. cit. Figs.3 and 4). The most complete sword is 44.8cm long with a 34cm long blade of maximum width 4.3cm. It has a square/rectangular sectioned tang, thickened, rounded shoulders and slightly tapering blade with a short point. The second is more fragmentary but similar. They do not seem to be *gladii* since the blades are too short and not wide enough (cf. the discussions in MANNING 1985, 148ff). But they may fall into the small group of 'short swords', perhaps the *semispatha* of Vegetius, known (MANNING 1985, 152 and particularly No.V4). These

finds are probably in private hands.

None of the caves is near a proven military site and only Poole's Cavern is near a major settlement. Poole's Cavern is a brooch and perhaps more general metalworking site. The finds here may be stock piled scrap (?or have been made at the site). However Greater Kelco, Kinsey and Minchin Hole were at the time of the deposition of the relevant items probably minor domestic sites or hideaways. Sewell's Cave was also a domestic site as far as can be ascertained. The button-and-loop fasteners at Ogof-yr-Esgyrn relate to fairly rich ?Antonine burials, at Dowerbottom Hole to domestic or manufacturing activity and at Dog Holes to burial or workshop roles.

A fuller analysis of Romano-British cave usage by Prof Branigan and the author will appear shortly and a full catalogue of all cave finds from Britain will be available from the author in due course.

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TWO CAVALRY FITTINGS FROM CASTLEFORD, WEST YORKSHIRE

M.C. Bishop*

Following the conclusion of excavations in the Welbeck Street area of Castleford (report forthcoming), Mr Malcolm Kitchen, examining spoil from the site that was to be turned into a supermarket car park, uncovered the two items that are the subject of the present note.

The first object (Fig.1) is a copper alloy junction *phalera* of decorative type 12b¹ with four rings attached to its rear face (functional type 6a²); it still has four articulated strap fittings attached to the rings. The *phalera* appears to have been cast, although there is no visible indication of whether the rings had been separately brazed on or cast in one with the disc.

The front face of the *phalera* (Fig.1a) has a simple raised border enclosing a flat face which still retains considerable traces of tinning. There is a circular decoration concentric to the border composed of a linked 'Running Dog' pattern.³ This appears to have been executed in niello inlay, although no scientific analysis has been carried out on the object. There is a further area of decoration at the centre of the disc, although, because of slight surface pitting from corrosion, it is by no means clear what motif is represented; nevertheless the similarity to a galloping horse (with legs stretched to the front and rear, a depiction of horses' movement found elsewhere in Roman art⁴) cannot be ignored.

The rings on the rear face (Fig.1c) are all circular in section and lean slightly outwards from the perpendicular towards the perimeter; two of them are conjoined. Junction Loop 1 is also a male strap fastener (type 8c⁵) of the simple crossbar type and the (narrower) rear reinforcing plate is still in place,

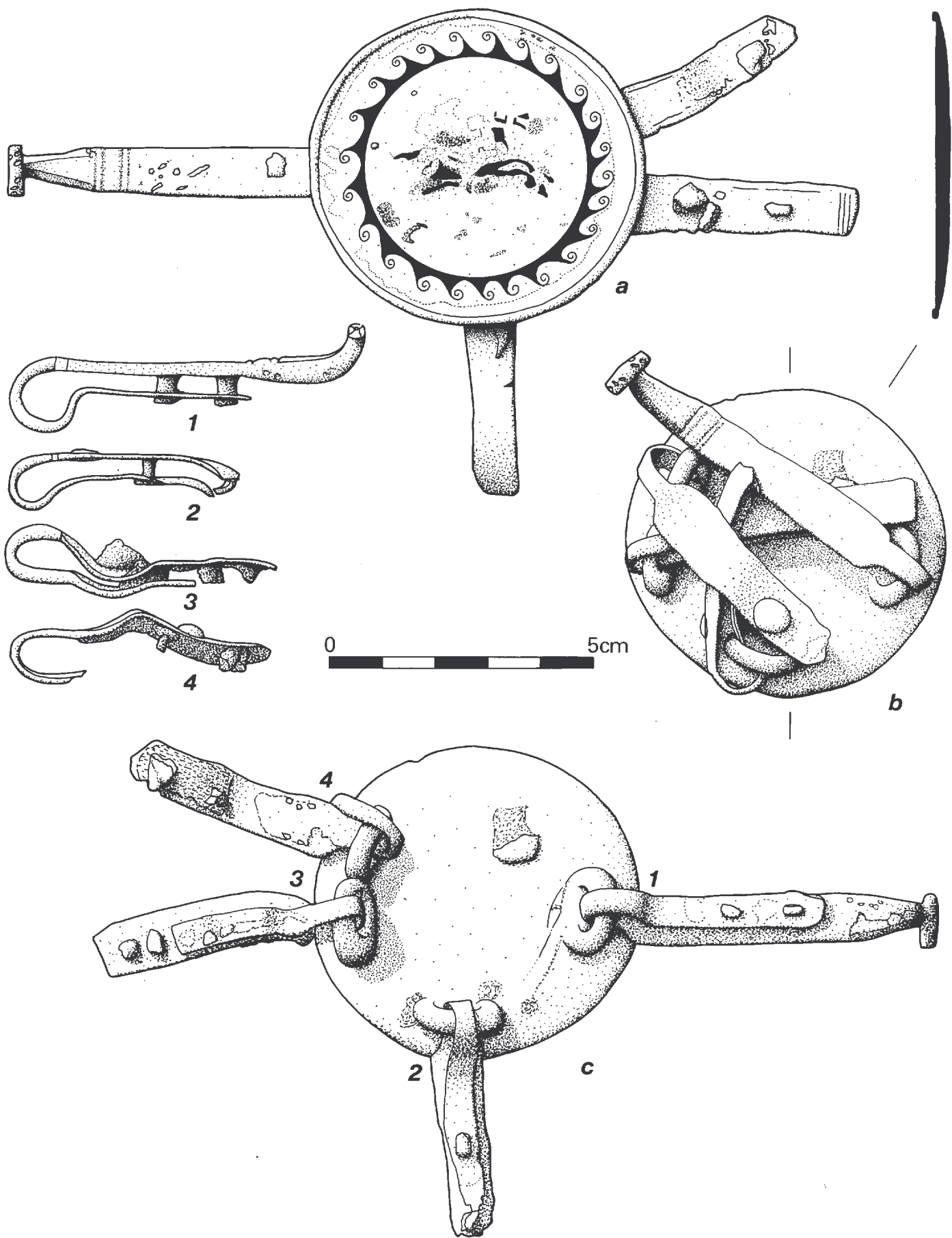


Fig.1 (scale 1:1)

held by two rivets. There is a slight thickening of the body towards the neck, the start of which is marked by a very shallow broad relief band bounded by two narrower ones. Such is the angularity of the section of the neck that it verges on octagonal. The loop sits flush with the upper face of the fitting but flares down well below the rear face of the reinforcing strip. A slight narrowing at the apex of the loop indicates some wear prior to deposition.

Junction Loop 2 (moving clockwise, when viewing the rear face of the *phalera*) is of the simple rectangular kind (type 10b)⁶ with the loop narrower than the body. The end of the body has been pulled downwards, wrenching the second rivet away from the reinforcing strip.

Junction Loop 3 is similar to two, although the loop protrudes above the face of the fitting, possibly a result of bending; part of the reinforcing strip is missing. On the upper surface, three transverse lines are lightly scored across the end of the fitting, whilst traces of a longitudinal line can be seen along one side.

Junction Loop 4 has suffered most damage of all, since it has its reinforcing strip missing and its body distorted by bending.

The main body of the *phalera* has been slightly distorted and the bending and other damage visible on the junction loops can be explained by their having been folded back across each other on the rear of the object (Fig.1b), thus serving to make a nice tidy parcel and also protect them from further damage. There seems little room for doubt that this was done in antiquity, probably immediately before deposition.

This object incidentally also confirms the observation⁷ that strap fasteners, of the kind attached to this *phalera*, belonged with cavalry equipment,⁸ there being no evidence that they ever served as 'baldric fasteners'.

PHALERA Diameter: 60mm; diameter within border: 57.5mm; maximum thickness of disc: 2.5mm; external widths of rings: 16mm; internal widths of rings: 7-8mm; height of rings: 11mm; thickness of rings: 4.5mm; distance of rings from perimeter: 6mm

STRAP FASTENER (JUNCTION LOOP 1) Total length: 66mm; maximum width of body: 10mm; max. width of loop: 5mm; thickness of body: 3mm; thickness of moulded neck: 5mm; width of crossbar: 10.5mm; thickness of strap: 3mm

JUNCTION LOOP 2 Total length: 47.5mm; max. width of body: 8.5mm; max. width of loop: 4mm; thickness of body: 0.5mm; thickness of strap: 3.5mm

JUNCTION LOOP 3 Total length: 54mm; max.

width of body: 10.5mm; max. width of loop: 5mm; thickness of body: 1mm

JUNCTION LOOP 4 Total length: 50mm; max. width of body: 10.5mm; max. width of loop: 5mm; thickness of body: 1mm

The second item is a small pendant (Fig.2) of the

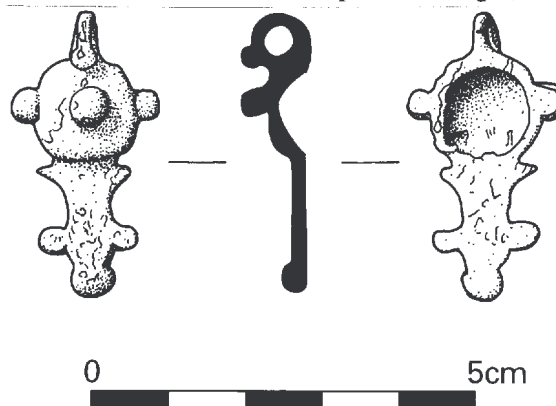


Fig.2 (scale 1:1)

sort commonly suspended beneath larger lunate pendants (type 8).⁹ The upper part of the body is in the form of a hollow-cast dome ornamented with a central knob, with small lobes on either side of it. Beneath this is a flat section decorated with further lobes and finished with a low relief terminal knob. The suspension neck is curved forwards from the top of the dome and, although it possesses a knobbed end, is attached to the dome. The aperture formed by the suspension neck is slightly oval in shape, with indications of wear near the top. The object appears to have been cast in one piece. The forward-curving suspension neck is a comparatively early feature amongst cavalry pendants and this piece may well be pre-Flavian in origin. The nearest parallel to this piece is an incomplete example from Wall.¹⁰

Height: 35mm; width: 19.5mm; diameter of dome: 14mm; diameter of knob: 4.5mm; thickness of body below dome: 1.5mm; maximum thickness over knob on dome: 8mm

Excavations at Castleford have produced a number of very fine examples of Roman cavalry equipment of the later 1st or early 2nd century A.D. and these two finds serve to complement these.

NOTES

* I am grateful to Mr Malcolm Kitchen for permitting me to study and publish this object.

1. BISHOP, 1988, Fig.40.
2. BISHOP, 1988, Fig.42.
3. Cf. BROUWER, 1982, Taf.7,281a where a pendant from the Doorwerth hoard, probably dating to around A.D.69, has a very similar decoration.

4. As with the galloping horses shown on the Horkstow chariot race mosaic, SMITH, 1987, illus.18.
5. BISHOP, 1988, Fig.55.
6. BISHOP, 1988, Fig.51.
7. Made by SWANN, 1970, 197 and followed by BISHOP, 1988, 103 (although the latter neglects to refer to SWANN, 1970 in this context). The Castleford *phalera* now joins examples from Doorwerth (BROUWER, 1982, Taf.2,144) and Buciumi (CHIRILA et al., 1972, Pl.LXXX) where the male strap fastener is attached to the *phalera* ring; no examples of a female fastener in this position are known to me.
8. *Contra* WEBSTER, 1989, 61, who, in considering two pieces from Caersws, adduces no new arguments, but rather offers the thought that 'the absence of any sort of T-bar to afford additional security at the end of the hook suggests that it is more likely to have served with a baldric' (*loc. cit.*), a notion I find it difficult to follow.
9. BISHOP, 1988, 98 and Figs.46-7.
10. WEBSTER, 1958, Fig.5,1

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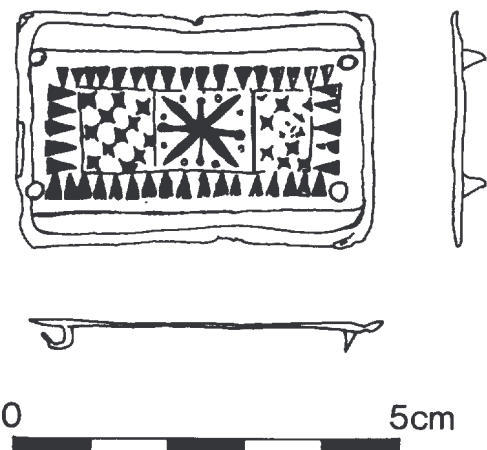
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A CREST BOX SUPPORT AND NIELLO-INLAID BELT PLATE FROM ITALY

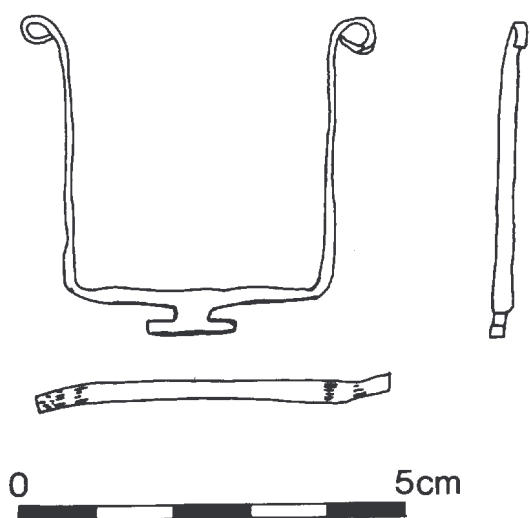
Dan Peterson (with illustrations by Steve Greeley)

Conducting displays of reconstructed Roman military equipment has frequently brought interesting finds in the possession of private collectors 'out of the woodwork'. Such was the case when these two objects were shown to me by a retired American naval officer who found them while looking for coins in fields in the area around Naples. The crest box holder may well have been returned to the ground had not a British officer who was present (and who was an ancient wargamer) identified the object.



The niello-inlaid belt plate is of fairly typical form, as depicted in the illustration, with yet another variation of punched designs similar to others previously encountered. It was secured to the belt by rivets in each corner, each beaten down completely flush with the belt plate. It measures 30mm high by 45mm long and is about 1mm thick. In some places the patina had been polished off of the cupric alloy plate, presenting a yellow 'orichalcum' appearance rather than a reddish 'bronze' hue. The rivets, however appear to be made of copper. There is no visible evidence of the plate ever having been tinned or plated.

The crest box holder is also of a cupric alloy, with a reddish copper hue. It is the lightest con-



structed example this writer has seen, and fairly unique in that it would support a crest almost flush to the helmet skull rather than some distance above as usually encountered. It is probable that this fitting was intended for an archaic Italian helmet though its twist-type base could conceivably fit the similar twist-type crest holders soldered to the top of numerous Imperial Italic and Gallic helmets, including, perhaps, the two Imperial Italic 'A' helmets found in nearby Herculaneum.

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