

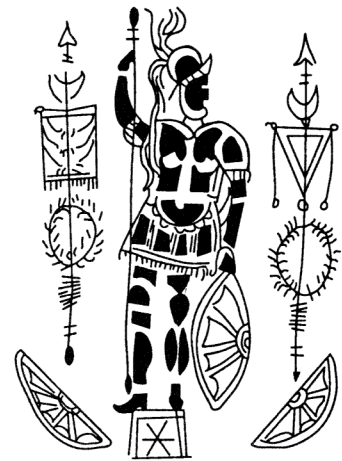
# ARMA

## NEWSLETTER OF THE ROMAN MILITARY EQUIPMENT CONFERENCE

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### CONTENTS

<b>Tiger, Tiger...</b>	<b>14</b>
<b>Neil</b>	<b>14</b>
<b>Early Enamelled Belt Plates from Britain</b>	<b>17</b>
<b>An Intaglio from High Rochester</b>	<b>19</b>
<b>Missing Persons</b>	<b>20</b>
<b>Parallax</b>	<b>20</b>
<b>Recent Publications</b>	<b>20</b>
<b>Bibliography of Roman Military Equipment Since 1980</b>	
<b>Papers (Part 8)</b>	<b>20</b>
<b>Reports (Part 6)</b>	<b>21</b>
<b>A Preliminary Note on Scale Armour from Carpow, Perthshire</b>	<b>21</b>
<b>Subscriptions</b>	<b>23</b>
<b>Notes for Contributors</b>	<b>23</b>
<b>List of Subscribers</b>	<b>23</b>
<b>Editorial Board Contact Addresses</b>	<b>24</b>

### EDITORIAL

The usual problems with the lack of contributions for this issue meant I had to dragoon some of my colleagues in the north-east of England into providing material. It so happens that, whilst news of new discoveries is these days scarce, the sheer richness and diversity of military equipment still unknown in the reserve collections of British museums mean there is still much that is 'new' to consider.

The effort of getting the second **ARMA** of each year ready at the same time as that year's volume of *JRMES* – each making the other later than it need be – has led me reluctantly to conclude that **ARMA** is going to have to change its publication dates in 1994, probably to March and September. However, write and let me know your opinions either way.

The more inquisitive amongst you may be curious as to the whereabouts of the promised London catalogue. Well, most of it is written and sitting on my hard disc at the moment, but the discovery of a collection of military leather (apparently including tent panels and saddle fragments) has delayed completion slightly. When it is finally ready (hopefully in the summer or autumn this year), all **ARMA** subscribers will receive information about it (*JRMES* subscribers will of course be able to purchase it at an advantageous price, all the more so if they have any *JRMES* vouchers).

Plans are already afoot for the next **ROMECC**, which will hopefully be held in the Netherlands in 1994 (so start saving now). Further information will be brought to you nearer the time in **ARMA** (I will even endeavour to get the conference number right next time!). For those who like anniversaries, March 1993 will be the 10th anniversary of the first Roman Military Equipment Research Seminar in Sheffield, as well as it being the year in which I first published a book (the volume of the proceedings).

**ARMA** is about to enter its fifth volume, and the usual demands for money go out for those whose time is up (in fact, a surprisingly large number of you now take block 3-year subscriptions), but most importantly of all, please keep contributions rolling (well, staggering) in.

## TIGER, TIGER...

Lindsay Allason-Jones

Recent conservation work on material in store at Corstopitum Site Museum (Northumberland) has brought to light further information about a small but curious group of mounts which are decorated with three-dimensional figures of reclining tigers. At the time of writing, three examples are known in Britain: from Walker, Eccles, and Corbridge.

The most complete example is that from Walker, Tyne and Wear (Pl.1).<sup>1</sup> This is a peltate mount with confronted griffin's head terminals which meet at a central basket or cantharus. Two very regular circular holes pierce the mount below the griffins' heads. The lower section has a three-dimensional figure of a crouching feline with four inlaid oblique stripes suggesting a tiger. A shallow, horizontal rib indicates the ground surface. There is a single incised marginal line around the mount. A rectangular-sectioned shank projects from the back. The piece has been made in a mould and the details of the tiger's face and tail, as well as the griffins' heads and the crosshatching on the cantharus, have been heavily incised afterwards. The inlay has been applied to filed grooves. The total width is 44mm, the depth 40mm, the length of the shank 10mm and the length of the tiger from its head to the tip of its tail is 35mm.

The Corbridge example is much smaller, having a width of 36mm and a depth of 31mm (Fig.1).<sup>2</sup> The shank is incomplete and now only measures 2mm. The length of the

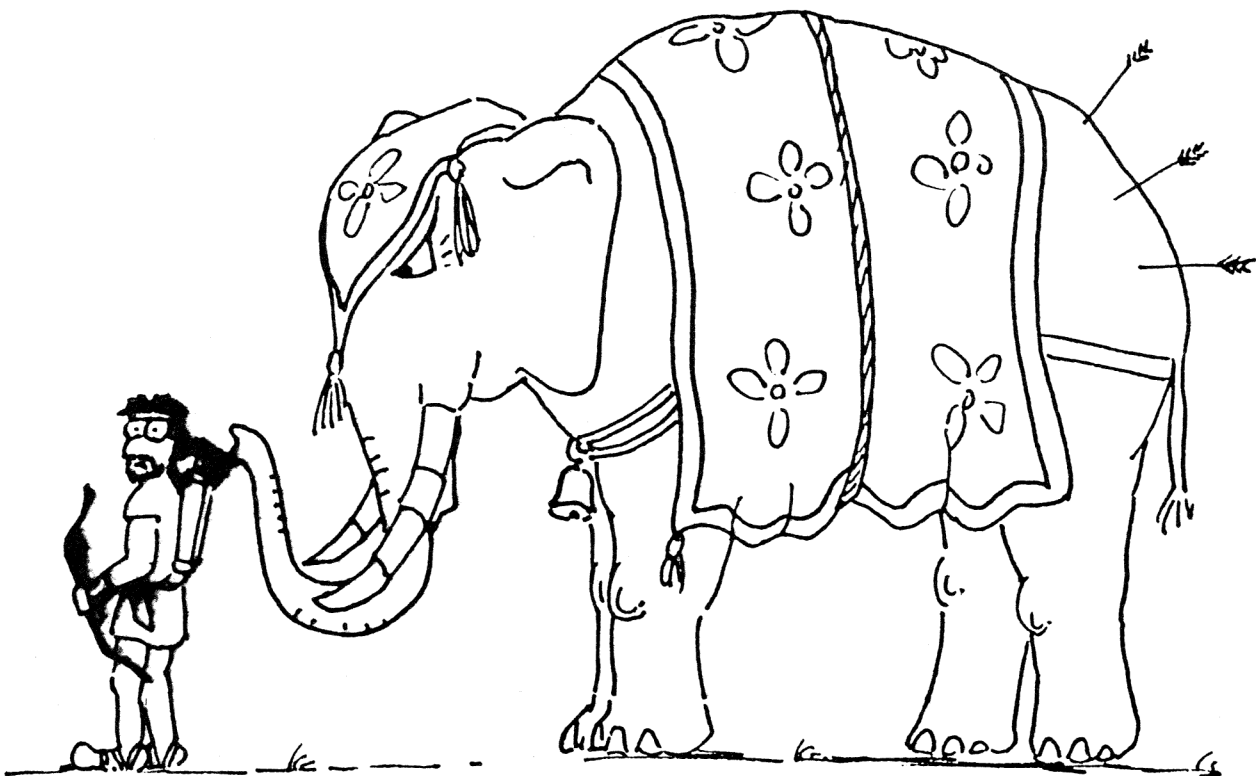
tiger is 29mm. It is also in a much poorer condition than the Walker find: the confronted griffins' heads can still be discerned, as can the shape of the cantharus in between, but no incised decoration. The three-dimensional tiger is portrayed in a similar pose although it only has three stripes.

Only half of the Eccles mount survives but there is enough to suggest that it was the same depth as the Walker mount but may have been somewhat wider (Fig.2).<sup>3</sup> No shank is visible but a small circular hole has been drilled at the lower edge. The griffins' heads lack the incised decoration of the Walker mount but crosshatching is visible on the cantharus. Only the hindquarters, tail and hind leg survive of the crouched beast and there is no trace of inlay. Both the Corbridge and Eccles mounts have the very regular circular openwork displayed on the Walker artefact.

During the conservation of the Corbridge mount the opportunity was taken to analyse the metal and the inlay material using energy dispersive X-ray fluorescence. The mount itself had 38% copper, 5% zinc, 34.5% lead and 4.8% tin. This is a high lead but low tin content and would have given a brassy finish to the original surface. The back of the mount produced a high reading for lead suggesting that the piece was attached by a lead/tin alloy as well as the shank, or possibly as a replacement for the shank if the latter was broken in antiquity. This may suggest that the mount was not attached to leather but to a less flexible material such as wood or metal. The inlaid stripes give a reading of 62% copper, 4% zinc, 14% lead, 2% tin and 8% sulphur. There was no trace of silver indicating that this was a cuprous sulphide niello rather than a silver sulphide niello.

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NEIL



Neil '86



Pl.1 The Walker Tiger stud. (Photo: AVC, University of Newcastle)

In her paper on the use of niello in antiquity, Susan La Niece concluded that 'as a general rule, Roman niello is composed of the sulphide of one metal only, either silver or copper, and is usually made of the same material as that of the object into which it was inlaid.'<sup>5</sup> She further remarks, following Craddock *et al.*, that copper sulphides were more commonly used than the silver sulphides until the end of the 5th century AD.<sup>6</sup> However, she also states that 'leaded niello is first found in the eleventh century from eastern Europe and no examples earlier than the thirteenth century have yet been found from western Europe', which does not square with the findings of the Corbridge analysis in which 14% of lead was noticed. The context of the mounts is therefore of some importance.

The Eccles mount was found in 1966 during the excavation of Room 79 in the Roman villa. This room has been identified as a storeroom and dated to c.A.D.180–290. The Corbridge mount was found on the Roman fort prior to 1939, presumably during the excavations undertaken by Forster and Knowles between 1908 and 1911. Unfortunately the accession number allocated to the object in the 1950s (39/50AC) does not allow its precise findspot to be traced and, as the activities of Forster and Knowles were well spread across the site, any attempt at a process of elimination would be unsuccessful.

The donation of the Walker mount to the Society of Antiquaries of Newcastle upon Tyne is shrouded in mystery. An accession number 1853.16 or 1858.16 is written in black ink on the reverse together with the numbers 17/5 in white ink. It appears in the present accessions catalogue of the Museum of Antiquities under 1853.16 but does not appear under either number in the original accessions register of the Society. It has been suggested that it was amongst 'a few Roman bronze objects discovered in debris of the Roman Wall at Walker.'<sup>7</sup> This reference implies that it was donated at the monthly meeting of the Society held on 1st April 1863 and not in 1853 or 1858. The 1863 donation, by the Rev. J. Bewick of Shields, consisted of 'a fibula of the usual form, four coins of the higher empire, and a non-descript crown-like object which had probably been sewn on leather'. For the tiger mount to have been in this group of material it has to be presumed that it was the 'non-descript crown-like object', which seems a rather cavalier description of such an unusual piece. It could, of course, have been covered in corrosion or soil when donated but it is now in remarkably good condition and shows no sign of having suffered from 19th-century conservation techniques.

If we accept, despite the confusion, that the traditional attribution is correct and that the piece came from Walker, how significant is this findspot?<sup>8</sup> Eric Birley was of the

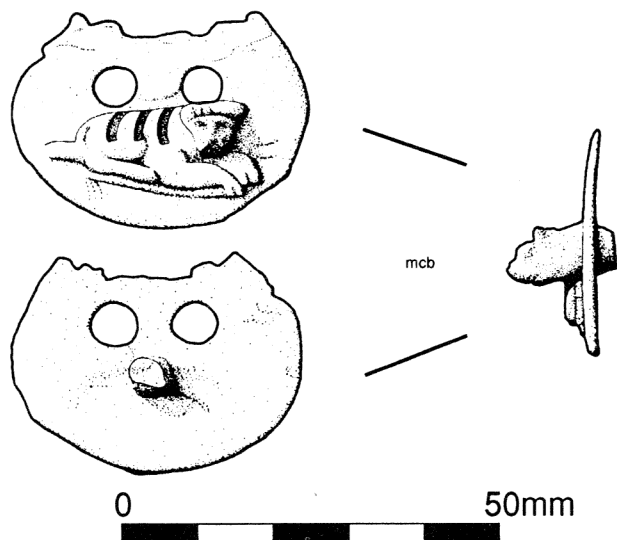


Fig.1 The Corbridge Tiger stud. Scale 1:1.

opinion that it 'almost certainly [came] from Milecastle 1'.<sup>9</sup> This presupposes the existence of Milecastle 1, which has been a matter of some debate over the years. Charles Daniels summed up the situation for the Eleventh Pilgrimage of Hadrian's Wall: 'the line of the Wall between Newcastle and Wallsend Fort is, at best, a traditional one, as are the sites of the first three milecastles, for the remains of no turret or milecastle have been found in modern times in this sector.'<sup>10</sup>

It may be concluded that, although the provenance of the Walker mount leaves a great deal to be desired, the Eccles and Corbridge examples offer firm evidence that these mounts are of Roman date and not medieval as the presence of lead in the niello might suggest. Further, the use of griffin-headed peltae as a decorative motif can be paralleled in stone on a group of legionary inscriptions, the bulk of which came from the Antonine Wall where they have been dated by F.H. Thompson to c.A.D.142.<sup>11</sup> An example was also found at Corbridge but is now missing.<sup>12</sup> In his discussion of the inscriptions Thompson put the extreme date range for the griffin-headed pelta motif as A.D.120–290 but he also drew attention to the use of confronted griffins on Roman funerary monuments where 'they are regarded (presumably) as protectors of the dead.'

While the griffin-headed pelta has a known history in the north of Britain during the Roman period, the tiger as a decorative element has not. Tigers and tigresses – it is not clear which is intended on the mounts – mostly appear in Roman contexts on mosaics with Dionysiac scenes or hunting scenes but are not common features of either.<sup>13</sup> In three-dimensional art panthers seem to have been the preferred representatives of the feline species although a small statuette of mid-Hellenistic date in the Ny Carlsbuerg Glyptotek, Copenhagen, suggests that tigers were not unknown in figural bronze.<sup>14</sup> The significance of a tiger in relation to the motif of griffins' heads and cantharus is unclear.

The niello technique first became popular in the early 1st century A.D. although metalworkers may have been aware of it earlier. In Roman Britain it was mostly used on military equipment and harness during the Claudian and Flavian periods. Corbridge, in particular, has produced a remarkable number of nielloed objects<sup>15</sup> but the paucity of

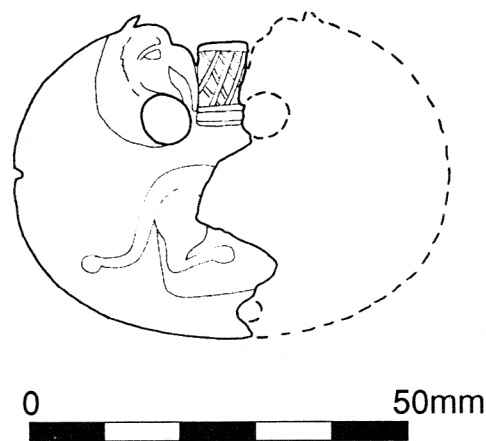


Fig.2 The Eccles Tiger stud (after DETSICAS, 1969, Fig.2). Scale 1:1.

examples from Hadrian's Wall suggests that the technique had ceased to be popular with the army by the end of the first quarter of the 2nd century – the time at which the griffin-headed pelta rose in popularity.

Two-and-a-half objects is not a statistically significant number on which to base any firm theories and these items seem to produce more questions than answers. The evidence of the findspots and the use of the griffin-headed peltae seem to confirm that these objects are of Roman manufacture, although the late date for the griffin-and-cantharus motif as opposed to the early date for the use of Roman niello may indicate a very narrow date range at the beginning of the 2nd century A.D. As the niello on only one of the objects has been analysed, the presence of lead may be coincidental but does hint that any similar studs found in the future should be subjected to metallurgical analysis as a matter of priority in order to clarify if lead in niello was present before the Middle Ages. The presence of lead on the reverse of the Corbridge example may also argue against the employment of these mounts on military leatherwork – the most commonly accepted use of nielloed mounts, although the sculptural evidence seems to suggest that griffin-headed peltae were favoured as an artistic motif by the military. It is to be hoped that more of these attractive pieces will be found in the future to answer some, if not all, of these conundrums.

## FOOTNOTES

1. Museum of Antiquities of the University and Society of Antiquaries of Newcastle upon Tyne Acc.No.1853.16.
2. Corstopitum Site Museum Acc.No.75.211 (39/50 AC).
3. DETSICAS, 1969.
4. My thanks are due to P. Clogg of the Conservations Laboratory, University of Durham for undertaking the analysis, and to hazelle Page of the North of England Museums Service, for discussing the results with me.
5. LA NIECE, 1983.
6. CRADDOCK *et al*, 1977.
7. *Archaeologia Aeliana* 2nd Series VI (1863), 184. The suggestion that this included the Walker mount originally came from Prof E. Birley.
8. The suburb of Walker is a compact area to the south

and west of Wallsend in a bend of the River Tyne. Before the building of a large housing estate in the 1930s, the area had a few farms but little other settlement.

9. *Op. cit.* footnote 3.
10. DANIELS, 1989, 75–7. For detailed discussions see BIRLEY, 1960; SIMPSON, 1975; WRIGHT, 1985.
11. THOMPSON, 1968.
12. *Lap. Sept.* 338, no.650.
13. TOYNBEE, 1973, 69–82.
14. POULSEN, 1951, 604.
15. L. Allason-Jones in BISHOP & DORE, 1989, 182; ALLASON-JONES, 1989.

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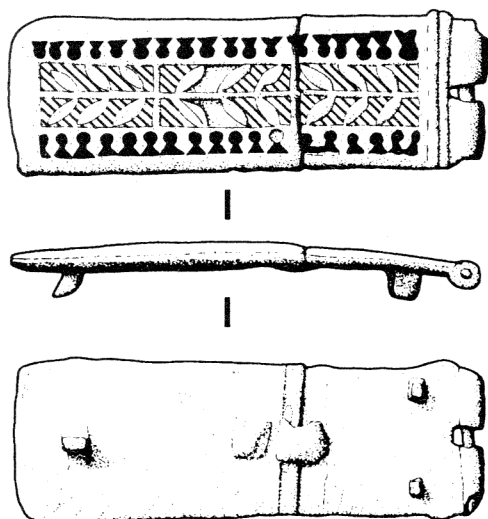
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## EARLY ENAMELLED BELT PLATES FROM BRITAIN

M.C. Bishop

### DESCRIPTION

1. (Fig.1) Copper alloy belt plate with hinge for buckle attachment. The object now has a green patina and is broken across its width one-third of the way along from the hinge. It has been joined, presumably in recent times, by a blob of solder on the rear face. There is also a band that appears to have been mechanically cleaned on either side of the break, to the rear, presumably to enable the solder to adhere. The whole plate, including the hinge loops, appears to be cast. An iron spindle remains in the hinge. Two circular-sectioned shanks survive to the rear, on either side immediately behind the hinge. A third, single, shank is situated at the other end of the plate and this is rectangular in section, oriented along the long axis of the plate. In the centre of the rear face, there is a low, rectangular, protrusion, fairly crudely finished. There appear to be file marks at the edge. The front face of the object is slightly concave, curving across both planes. The decoration consists of a sunken tripartite rectangular panel with three raised sets



0 50mm

Fig.1 Enamelled beltplate from Staxton. Scale 1:1.

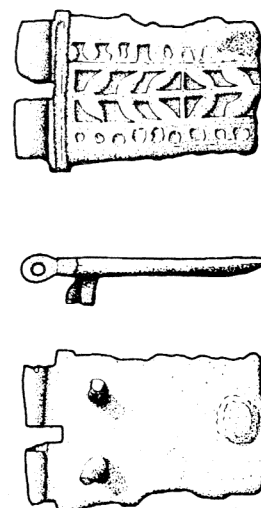


Fig.2 Enamelled beltplate from Corbridge. Scale 1:1.

of stylized leaves. These are surrounded by very pale green enamel, perhaps originally white. The central design is bordered on the long sides by linked keyhole motifs, inlaid with red enamel.

L: 60.5mm; Max W: 20.5mm; Body W: 20mm; Body Th: 2.5mm; Shank L: 4mm (single), 3.5mm (double); L between shanks: 43mm; W between shanks: 10.5mm. Staxton (Doncaster Museum, Brewster Colln).

2. (Fig.2) Belt plate, of identical type to No.1 above, but broken across its mid point. No inlay survives in either the central or border designs. There are two shanks on the rear face again as well as the same low protrusion as before.

L: 33mm; Max W: 20mm; Body W: 18mm; Body Th: 1.6mm; Shank L: 4mm. Corbridge (Corbridge Site Museum 75.2431).

## DISCUSSION

Between the tradition of niello-inlaid belt plates of the first century A.D.<sup>1</sup> and later examples of the enamel inlaid variety from the second and third centuries<sup>2</sup> our knowledge is deficient. There are vague indications that enamel inlaid belt plates were beginning to appear in the early second century, possibly in the pre-Antonine period, when enamel was not a favoured medium for decorating military equipment.<sup>3</sup> In the light of this, there is a set of belt plates from sites in Britain that is particularly interesting, perhaps even illuminating, on the development of military inlaid decoration in the early second century, and the two plates described above belong to this group.

Other examples of these plates, matching the two described above, are:

3. **Manchester.** L: 60mm; Body W: 21mm (measurements from drawing). Reported to contain niello.<sup>4</sup>
4. **Holt.** L: 64.5mm; Max. W: 23mm; Body W: 21mm

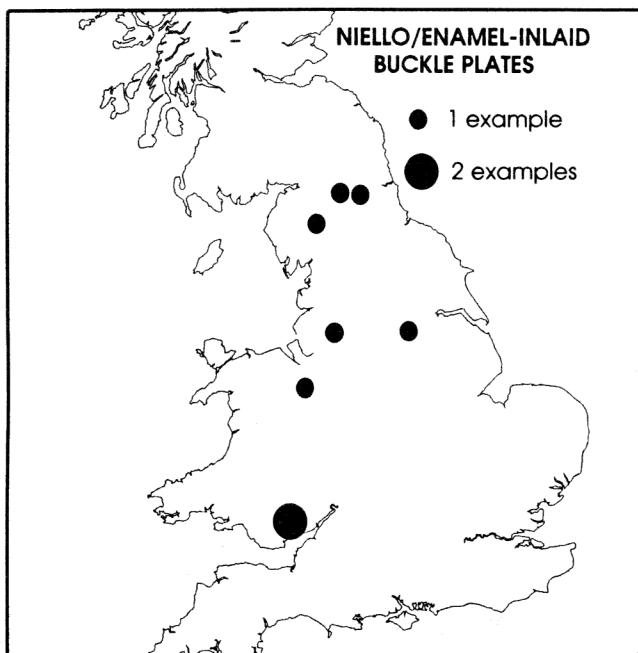


Fig.3 Distribution of niello/enamel inlaid beltplates from Britain

(measurements from drawing).<sup>5</sup>

5. **Golledge's Field, Caerleon.** Unpublished, National Museum of Wales.<sup>6</sup>
6. **Roman Gates, Caerleon.** L: 60mm; Max. W: 22.5mm; Body W: 20mm; Body Th: 1.5mm; Shank L: 2mm, 2.5mm (measurements from drawing). Reported to contain dark blue enamel around the leaf motifs.<sup>7</sup>
7. **Brough, Westmorland.** L: 61.5mm; Max. W: 23mm; Body W: 21mm (measurements from drawing). Reported to contain blue enamel.<sup>8</sup>
8. **Chesters.** Unpublished, Clayton Collection 963 or 964 (Hall No.911). Contains enamel.<sup>9</sup>

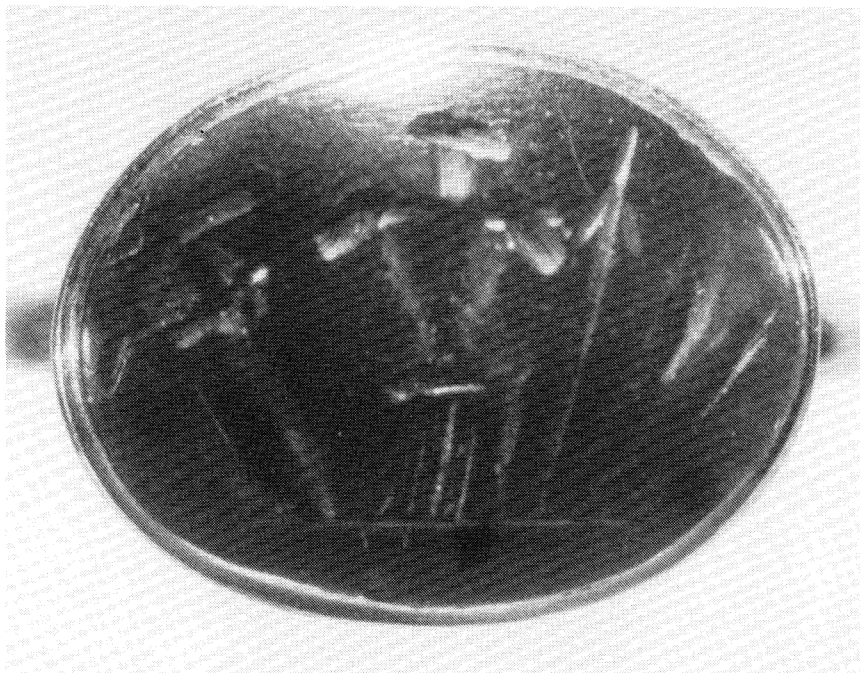
The distribution of these plates appears to be exclusively British. Moreover, they are invariably hinged buckle plates and always have three shanks for attachment. With the exception of the Holt plate, all of the intact plates measure around 61mm and have almost identical decoration. The Holt plate is marginally longer and the peripheral keyhole design has degenerated into two series of linked blobs. The dating evidence is sparse, but the Roman Gates example comes from Phase III of Block B and appears to belong around A.D.100–60, and it may be worth noting the likely withdrawal of a significant part of the legion c.A.D.120.<sup>10</sup> All of the objects come from sites that are Flavian (or later) foundations and do not produce the typical pre-Flavian niello-inlaid belt plates.

At 18–21mm in width, the plates would seem to have been attached to fairly narrow belts and they need not have belonged to waist belts, but could equally have derived from the baldric or horse harness, although their uniqueness would probably mitigate against the last. The fact that the only example to have had its inlay scientifically analysed should prove to have been decorated with niello is extremely interesting, in the light of new evidence emerging on the use of this decorative technique in the 2nd century A.D.<sup>11</sup> Even more so, since some of the other plates are quite clearly inlaid with enamel.

Why the plates should all be of one type, why there are only buckle plates, and why they are only found in Britain are questions that immediately suggest themselves, but which cannot yet be answered. Their distribution (Fig.3) does nothing to further any idea of specificity to one unit or army-group.

## NOTES

1. GREW & GRIFFITH, 1991, 56–60.
2. OLDENSTEIN, 1976, Taf.63,809–15.
3. *Ibid.*, Taf.64, 826–31; ALLASON-JONES & BISHOP, 1988, 105.
4. BRUTON, 1909, Pl.102,3; GREW & GRIFFITHS, 1991, Fig.8,33.
5. GRIMES, 1930, Fig.56,22; GREW & GRIFFITHS, 1991, Fig.8,32.
6. Although see BATESON, 1981, Fig.9Ai.
7. EVANS & METCALF, 1992, 123 No.88.
8. RCHME, 1936, xxxix Fig., A16.
9. BUDGE, 1907, 376, No.656/657.
10. EVANS & METCALF, 1992, 60–5.
11. ALLASON-JONES, 1989; 1992.



*The High Rochester intaglio (photo: University of Newcastle upon Tyne AVC)*

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## AN INTAGLIO FROM HIGH ROCHESTER

*Lindsay Allason-Jones*

In December 1990 the Museum of Antiquities of the University and Society of Antiquaries of Newcastle upon Tyne was able to acquire at auction a carnelian intaglio set in a Victorian gold finger ring.<sup>1</sup> The intaglio was discovered in the 1850s at High Rochester (*Bremenium*) in Northumberland and may once have been set in a copper alloy or iron ring although no trace of the original setting survives.

The oval carnelian, measuring 11 × 9mm, has two small blemishes but is otherwise of fine quality. The device has been incised 'landscape' to fill the whole of the slightly convex face of the stone and shows a panoply of arms. In 1867 Albert Way, in his handwritten *Descriptive Catalogue of a Collection of Rings, chiefly found in Northumberland, also of Irish Gold Ornaments, preserved at Alnwick Castle* described the intaglio: 'in the centre is seen a cuirass suspended on a trunk of a tree; on the left is a barbed spear fixed in the earth, and a pair of greaves; on the right, a shield and a crested helmet.' The treatment is rather stylistic so the intaglio must be dated to the first to second century A.D. on artistic criteria rather than on the details of the armour.

Arms and armour are not commonly seen as decorative motifs on jewellery of this period. Indeed, only two other intaglios have been found from Roman contexts in Britain which show similar trophies: one from the Sacred Spring of Sulis Minerva at Bath,<sup>2</sup> the other found reset in a late Saxon finger ring near Faversham, Kent.<sup>3</sup> This is also the only intaglio to have been discovered at the outpost fort at High Rochester. The exact findspot is unknown; Albert Way, even in 1867, could only state 'the site of Bremenium was partly excavated by direction of the late Duke of Northumberland

in 1852 and the investigation was resumed in 1855.'

To students of Roman military equipment the observations on this intaglio passed to Mr Way by the Rev. C.W. King may be of interest, not least for showing how far the study of Roman armour has progressed since 1867!

'The Bremenium sard is interesting, for, though the engraving is clearly that of the later Roman Period, yet the subject shews how long the conventional type of a Warrior's Panoply continued to hold its ground. The Arms are completely those of the Homeric Chief, not those of the Roman Soldier owning the Signet. For example, the greaves here figure conspicuously, pieces of armour unknown in the Imperial service, having long been superseded by the *caliga*. The Shield also is the round bossy *clypeus*, not the oblong Roman *scutum* of rectangular form. The design had evidently been copied from some older original received as the established type for the Signet of a Military person.'

## FOOTNOTES

1. Accession number 1991.2. The intaglio had been published by HENIG (1978, No.412) and by CHARLESWORTH (1961, 33, No.28, Pl.6, No.8).
2. HENIG, 1978, No.411.
3. *Op. cit.* No.413.

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## MISSING PERSONS

The concept of 'taking the money and running' is well known, but paying and disappearing is less common. Nevertheless, some subscribers to **ARMA** do disappear whilst their subscriptions are still valid and I get their issues returned to me. If this happens once, then it may be a mix-up in the postal system, but when it recurs it is a clear sign of a breakdown in communication. Therefore, if anybody knows where the following can be contacted, could they please let me know, then I can send on the itinerant copies of the newsletter to their owners.

*Ms M. Wieser, formerly of: Edelhofg. 15/23, A-1180 Wien, AUSTRIA*

*Mr C. Sinclair-Poulton, formerly of: Javelin Securities Ltd., Saville House, 2 Lindsey Street, LONDON, EC1A 9HP*

## PARALLAX

Everybody encounters old-fashioned ideas and reconstructions at some time, and military equipment studies is rather prone to producing such groan-inspiring masterpieces. Many of these beg to be quoted, so if you come across any lesser-known verbal (or pictorial) reconstructions of Roman

arms and armour that you think merit a wider airing, then send them in.

To get this occasional series off to a good start, here is a passage from R.H. Forster's *The Amateur Antiquary* of 1899. Forster not only went on to become the chief excavator of Corbridge (Northumberland) from 1908-14, but also a prolific historical novelist. He even had a few volumes of poetry published and was also a proficient photographer. Anything else? Oh yes, he was an accomplished rower too! *The Amateur Antiquary* is a series of more-or-less fanciful pieces contributed to his old college magazine, all focusing on the Romans in Tynedale and on Hadrian's Wall.

“ Let us take a typical private from the front rank, and examine his uniform. He wears a burnished bronze helmet of peculiar form, which may best be described as resembling in shape and size a modern hunting cap without the peak: from the crown of it a short white feather rises with a saucy slant towards the right, and from the same socket a long red plume arches back, and falls to the nape of his neck. His body is clothed in a stout, half-sleeved tunic of tawny leather, with a gorget and shoulder plates of bright bronze; and round the skirts of the tunic, which reaches almost to his knees, are sewn three overlapping rows of bronze scales, to protect his thighs. Bronze greaves and stout leather shoes complete his bodily equipment, and on his left arm he carries an oval shield about two and a half feet long: the shield is of thin wood covered with fluted plates of metal, which radiate from a round boss in the centre; the boss is hollow, and large enough to admit the man's hand; for he grasps the shield by a bar which stretches across the back of it. In his right hand he carries a narrow-bladed spear, six feet in length; and a short sword, in a sheath of bronze-bound leather, hangs at his right side from a baldric which passes over his left shoulder.”

However, lest you chortle too heartily, ponder what a 1990s reconstruction of a Roman soldier will look like in 90 years' time!

## RECENT PUBLICATIONS

- Junkelmann, M. *Die Reiter Roms, Teil III: Zubehör, Reitweise, Bewaffnung*, von Zabern, Mainz: 1992  
ISBN 3-8053-1288-1 DM49,80

## BIBLIOGRAPHY OF ROMAN MILITARY EQUIPMENT SINCE 1980 Papers (Part 8)

JACKSON 1990: Jackson, R., 'A Roman metalworking die from Oulton, Staffordshire', *Antiquaries Journal* LXX, 456-9

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Fig.1 The Carpow scale armour with textile backing, leather edging, and linen lacing. (Scale 1:2)

## Reports (Part 6)

AUSTEN 1991: Austen, P.S., *Bewcastle and Old Penrith; a Roman Outpost Fort and a Frontier Vicus; Excavations 1977-78, Cumberland and Westmorland Antiquarian and Archaeological Society Research Series No.6*

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## A PRELIMINARY NOTE ON SCALE ARMOUR FROM CARPOW, PERTSHIRE

J.C.N. Coulston

In 1979 a section of articulated Roman scale armour was found in a shallow pit within the praetentura of the Severan base at Carpow on the River Tay in Scotland. The piece was cleaned, drawn and partly consolidated, then described in a preliminary note by Dr J.P. Wild.<sup>1</sup> It is lodged

in the McManus Galleries, Dundee. In recent years the state of the armour has deteriorated alarmingly, and the Dundee museum has commissioned the present writer to undertake full study and analysis of this important artefact. Other specialists have been invited to work on the variety of materials involved.<sup>2</sup>

The Carpow scale is extraordinary for its state of preservation when found, a state comparable, for instance, to examples surviving at Dura-Europos (Syria) in arid conditions. It represents a piece of armour folded over several times to form a package which is now approximately 205mm long and 130mm wide. During conservation work the top layer was removed so that the armour is now in two principle pieces. The CBA scales are 15-16mm long and 13mm wide. Each is rectangular with rounded lower corners. Three pairs of vertically-aligned perforations are positioned one in the middle near the top edge, and one lower down by each side edge. A large number of CBA ribbons, up to 1mm wide, survive to tie the scales together in lateral rows using these side perforations. Linen S-ply cords were laid along the rows across the upper parts of the scales, and these were attached with yarn through the upper pairs of scale perforations to a surviving linen textile backing. Each row of scales not only overlapped that below, but also covered and protected the latter's cord. Two sections of leather also survive, 128mm and 220mm long, having been used as edgings, folded over and affixed with leather thongs. Neither is in its original position.

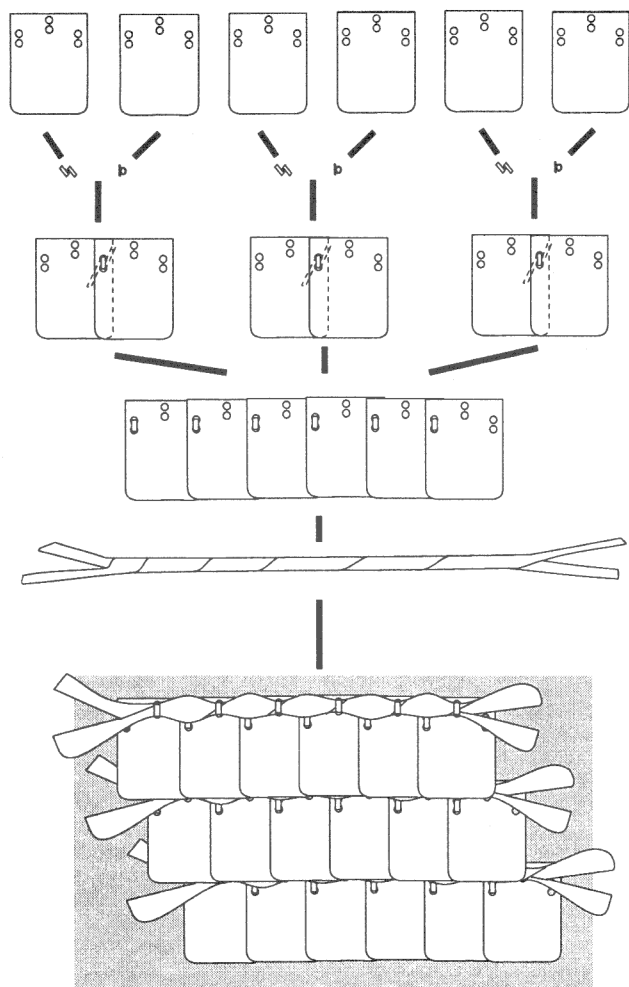


Fig.2 The construction of the Carpow scale armour.

The piece is thus important for having all of its structural components represented together so that the method of construction is certain. Survival of organic materials may be due to saturation in CBA corrosion-products. What is not yet clear is its original position as an item of protection. The leather may have edged either the neck or under-arm openings of a cuirass, but further disengagement of folded sections may clarify this question.

Individual scales, or small groups wired together, are very common finds on Roman military sites, and this class of artefact is long overdue for an exhaustive re-examination.<sup>3</sup> A great range of numbers, sizes, groupings and spacings of scale perforations reveal a variety of armour construction and assembly methods. The Carpow scale project presents an ideal vehicle for general research, and its scope will include proper scientific analysis of component materials, a practice which is still surprisingly uncommon, and which has broad technological implications for RME studies in general.

Many questions need to be addressed concerning the design and construction of scale armour. The typology of individual scale features requires exploration, even if the final conclusion (as seems likely when other classes of find are considered) is that they defy neat categorisation, and even if attempts to trace a logical temporal development fail. A broad study will be undertaken to include as much of the scale recovered from military sites all over the Roman empire as possible (see below). The Carpow scales are not

large, but they are also not the smallest to be found, and there are problems of function and practical protection arising from some scale armours. There are other rare examples of surviving organic scale armour components (Dura, Carnuntum, Vindonissa etc.) which need to be examined. The iconographical evidence will also be brought into play in discussing the possible identity of scale-wearing soldiers.

The Carpow find is also important for its date and site context. The location in a pit suggests that deposit was made at the time when Roman Carpow was being dismantled and tidied up just prior to abandonment. This mechanism accounts for many substantial scale finds in Britain and on the continent, for example those from Newstead, Corbridge, Ham Hill, Straubing and Dura.<sup>4</sup> Usually, military equipment in such deposits was surplus to the departing troops' requirements and/or damaged and awaiting repair. Again, disengagement of the folded Carpow armour may reveal more about its state when it went out of use. Numerous tile-stamps from the site mention *legio VI Victrix*, and a dedicatory inscription, probably dating to AD212 or later, carries *legio II Augusta* emblems. Central range buildings were substantially constructed in stone with painted plaster decoration and window-glass. The base was thus presumably designed to be a permanent installation. Its 11ha. internal area would have been large enough to accommodate c.3000 troops, perhaps in legionary *vexillationes*. The obvious analogy of a legionary presence in the same geographical region may be drawn with Flavian Inchtuthil.<sup>5</sup>

## NOTES

- 1 WILD 1981.
- 2 Dr Wild is contributing to the textile study component of the project. Mr A. Zealand, Assistant Keeper of Human History at the McManus Galleries, was responsible for the project's inception, and has offered every assistance as work progresses.
- 3 ALFS 1941, 82-105; ROBINSON 1975, 153-61; BISHOP & COULSTON 1993, 60, 85, 117, 141-45, 157.
- 4 BISHOP 1986; COULSTON 1990, 146-47; BISHOP & COULSTON 1993, 34-7.
- 5 BIRLEY 1962-63; KEPPIE & ARNOLD, 1984, No.171; KEPPIE 1990, 153-54.

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