

## SADDLE COVERS, CHAMFRONS AND POSSIBLE HORSE ARMOUR FROM CARLISLE

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Work is currently in progress on large collections of Roman leather from Carlisle. The items of horse equipment described here have still relatively few parallels and it is hoped that advance publication, as well as adding to the number of known examples, may produce useful feedback.

The design of the Roman saddle cover is now better understood thanks to the work of Peter Connolly. The way in which the cover was fitted around a wooden saddle tree has been convincingly argued<sup>1</sup> and is not contradicted by evidence on the Carlisle saddles. A problem still to be solved is how exactly the lower edges were sewn together: these edges frequently have the form of hems while in practice they must have been seams. The problem is not solved by the Carlisle pieces but they do provide important evidence for this and for other aspects of the saddle's construction and appearance. The other items (chamfrons and studded leather) are parts of composite objects whose appearance is imperfectly understood, or in the latter case unknown. It is hoped that as more examples are found their interpretation will become easier.

The finds come from excavations by Carlisle Archaeological Unit at Annetwell St. within the area of the Flavian fort<sup>2</sup> and at Castle St. just outside it.<sup>3</sup> Earlier excavations at Annetwell St. by the late Dorothy Charlesworth have also contributed material. The last item comes from a recent watching brief in the city. Site codes:

ABB A: Abbey St. watching brief, 1987.  
ANN A: Annetwell St. C.A.U. excavations, 1981-84.  
C73: Annetwell St. Charlesworth excavations, 1973.  
CST B: Castle St. C.A.U. excavations, 1981-82.

### ABBREVIATIONS

Fl.= flesh side  
Gr.= grain side  
LH/RH = left hand/ right hand  
Thr.imp.= thread impression.

Seam types I and II refer to W. Groenman van-Waateringe's classification.<sup>4</sup> Dimensions given in brackets are incomplete.

### 1). SADDLE COVERS

1-5. (Fig.1) Found together in debris beside ?bread ovens. Provisional date in second quarter of second century. ANN A2070 L73.

1. Remains of one side of a saddle cover. The edges front and back are flat with a single line of stitching. They have no thread impressions and only in the lower RH corner are there any

impressions of another edge superimposed. Here there is an impression 10mm wide on the flesh side running for about 25mm.

The lower edge is folded onto the flesh side and stitched as for a Type II(a) seam. An additional line of stitching near to the edge and going through both thicknesses may have been extra strengthening for the seam. The reconstructed lower edge measures c. 550mm; the angle between the lower and RH edges is of about 73 degrees, similar to that on a saddle from Vechten<sup>5</sup> while the Valkenburg saddle is more rectilinear.

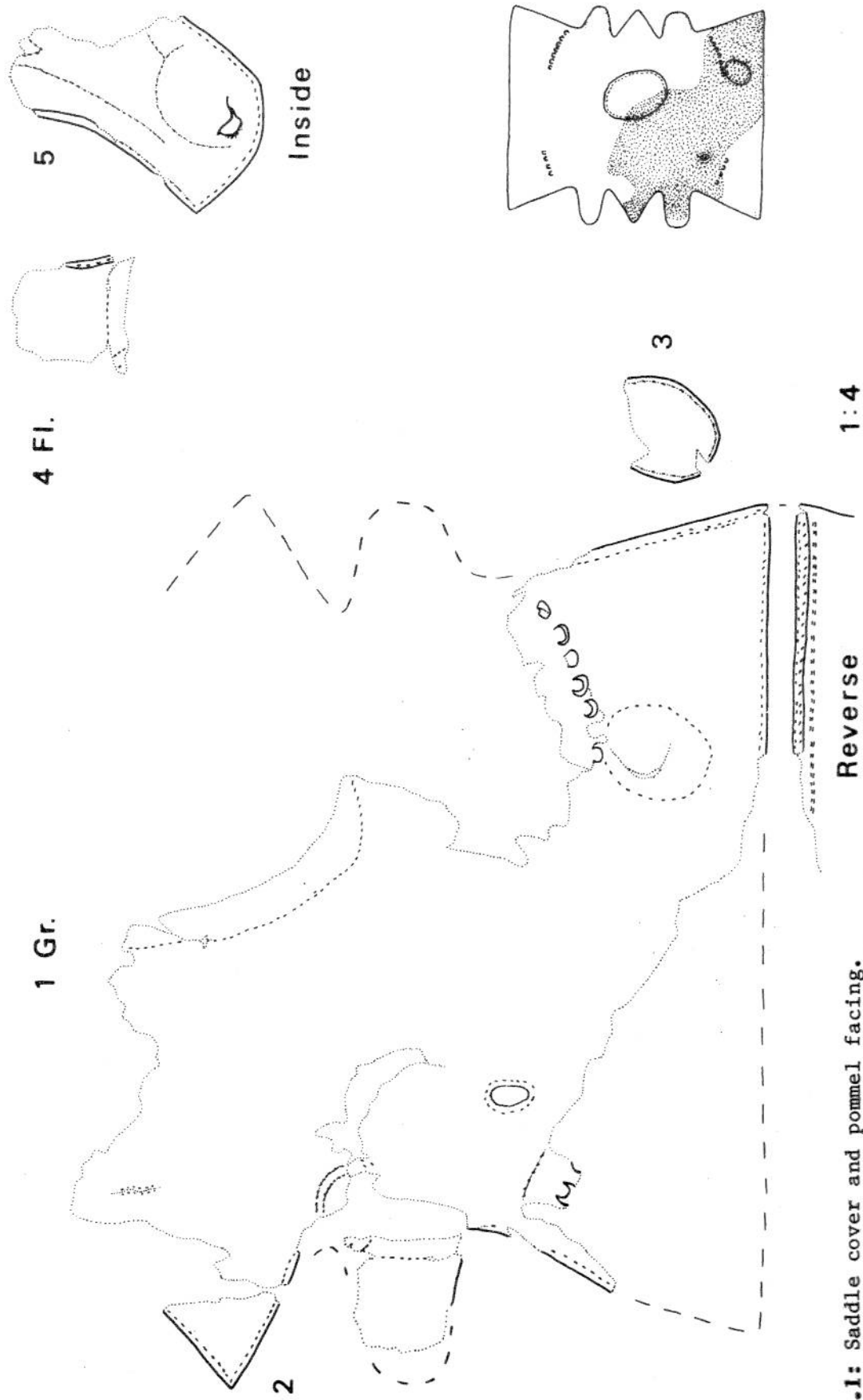
Running obliquely to the lower edge are two rows of crescent shaped slits: the RH row is complete with eight slits, only one and a half survive on the LH side. Above those is a line of stitching with thr.imp. on the gr. side, suggesting a backing piece sewn behind the openings.

Both pommel backings, which should project from the front and back edges, have torn away but on the LH side are remains of two half circles of stitching which linked the base of the pommel backing with the triangular 'dart' (cf.Fig.2). Both rows have a continuous thr.imp. on the gr. side.

There are at least four repairs to the saddle cover: i) A 'U' shaped tear, bottom right, is surrounded by stitching for an oval patch (3) applied to the grain side. Continuous thr.imp. on fl. side. ii) A small oval hole, centre left, measuring 29 by 16mm. The edges are cut, the result of tidying up a small tear before applying a patch to the flesh side. The patch is lost. iii) The edges of a tear 30mm long (top left) have been whip stitched together. iv) The bottom 65mm of the RH edge has extra stitching, possibly a repair after the original stitching had come adrift. v) In the top right of the cover as drawn, a curving line of stitch holes follows the curve of the edge which at this point may be roughly cut rather than torn. No such internal stitching occurs on the Valkenburg saddle<sup>6</sup> and it may result from a large repair. It lies on the centre line of the saddle, i.e. the rider's seat, and wear would be expected here. If the stitching is from an oval patch (as suggested in the reconstruction, Fig.1) it would have measured about 200 by 150mm. As no thread impressions are visible here it is possible there were patches on both sides. L.(500)mm. W.(460)mm. Thickness 1-2mm. Unconserved.

2. Detached piece with two edges meeting at 75, the third edge torn. Presumed to come from one of the triangular darts at front and back of the saddle. Illustrated on the left in Fig.1 since the lower edge of one such dart survives there on the main saddle piece. Since the torn edges of the two pieces do not join up at this point there may be some missing.

Each original edge is flat with a single line of stitching at between 3 and 6mm from the edge. No thrimps. but the lower edge (as drawn) has the impression of a superimposed edge 7mm wide on the gr. side. The upper edge has a similar impression up to 8mm wide on the gr. side and up to 9mm wide on the fl. side. L.(66)mm. W(81)mm. Thickness 1mm. Unconserved.



**Fig.1:** Saddle cover and pommel facing.  
 Bottom right: reconstructed outline of cover.

3. Oval patch with one end torn away. Single line of stitching around the edge with continuous thr.imp. on gr. side. The stitch holes match those around the tear on 1. L.(79)mm. W.64mm. Thickness 1mm. Unconserved.
4. Detached backing piece for pommel. Edges torn all round, apart for 35mm along lower RH edge (viewed from fl.) where the edge is folded with a line of four stitch holes running along the folded portion. This stitching can be matched to that on 5 and there is little doubt that they were sewn together (Type I seam). Across the base runs a single line of stitching with no thr.imps. either side. At its LH end it is converging with a diagonal line of three stitch holes also without thr.imp. A single hole 9mm to the left of these may be part of another row running in the same direction. L.(75)mm. W.(65)mm. Thickness <=1mm. Unconserved.
5. Pommel facing made from two thickness of leather sewn with their flesh sides together. Top and part of one edge are missing. The upper LH edge is folded onto the inside and has stitch holes running along the apex of the fold; lower down the edge has unfolded and the same stitching shows a continuous thr.imp. on the inside of the facing. The curving lower edge has a single line of stitching without thread impressions, but there are clear impressions of superimposed edges 6-10mm wide on the inside and 6-8mm wide on the outside, where the area of overlap is very much less worn than elsewhere.

At the base of the facing is a U shaped slit through both thicknesses, pulled out of shape at the bottom and with its edges turning outwards. There is a semicircle of stitching around the slit and two slanting lines above which appear roughly to echo the shape of the facing and to meet near the top in an 'M'. This stitching may have had a decorative effect but it also serves to secure the two layers of the facing together. The stitch holes are quite closely spaced and show a continuous thread impression on the inside: only in a few places can it be seen on the outside since much of the outside surface is heavily abraded, presumably from use. L.(176)mm. W.(132)mm. Thickness 2-3mm. Unconserved.

### Discussion

It would be useful to know from which side of the saddle 1 comes. As internal evidence there are the two rows of crescent slits, with eight on the right and an unknown number on the left. The Valkenburg saddle has six slits at the front and only four at the back. If a general rule 'more at the front' applied then a row of eight could belong there. Other evidence should come from the pommel facing 5 and (torn off) pommel backing, 4 which were found with 1 and seem likely to belong to it. The shape of 5, when viewed from the outside, is such that it must belong either to a front or a back RH pommel.<sup>7</sup> Then 1 must come from the RH side and its RH edge must be the front edge of the saddle.

The problem remains, to which edge do the pommel pieces belong? In Connolly's view the front facings are distinguished by having two

angled lower corners as opposed to one angled and one rounded. Unfortunately one of the lower corners of 5 is missing and may or may not have been angled. The backing piece 4 appears to be quite short however, a characteristic of front pommel backings according to Connolly. Although the top is missing its current top coincides with that of the facing and since no more than 20mm seems to be missing from this (comparing it with 10 and 11 below) the backing piece can have been no more than 95mm long at most. This is shorter than the Valkenburg rear pommel backing one and would suggest 4 might come from the front.

With 4 in the position of a right front pommel backing, however, the two rows of stitching in its lower RH corner (gr.side) are on the wrong side to be part of the two half-circles of stitching between the pommel backing and the triangular dart. All the Carlisle backing pieces (4, 7, 8, 12, 15) have these two rows of stitching at one side and this can only be the side which was adjacent to the dart.

Thus 4 must come either from the rear RH pommel or the front LH one. Since 5 cannot, apparently, be from a front LH pommel the correct position for 4 should be that illustrated. The 'circle' stitching on 4 does not join well with that on the main saddle piece, but the latter is badly torn and perhaps distorted in that area. The interpretation of 4 and 5 as rear pommel pieces raises difficulties, but for the reasons given they cannot easily be placed elsewhere.

There are no indications as to the way in which the edges of this saddle covering were sewn together, other than around the pommel. The leading edges of the large piece, the edges of the triangular dart and the base of the pommel facing are all without thread impressions, yet Peter Connolly's reconstruction of a 'fitted' cover requires that these edges be seamed and not free hanging bound hems. The only way this could be done without leaving a thread impression would be to sandwich the edges together and to sew them inside a binding or piping. While it is difficult to imagine how this could be done and the edges still remain perfectly flat some such explanation must be looked for.

6-13 (Figs.2 and 3) From soil above backfilled ditch. Not securely stratified and a loose dating range of 79-130 A.D. is suggested. C73/103 A.M.Lab No.738717.

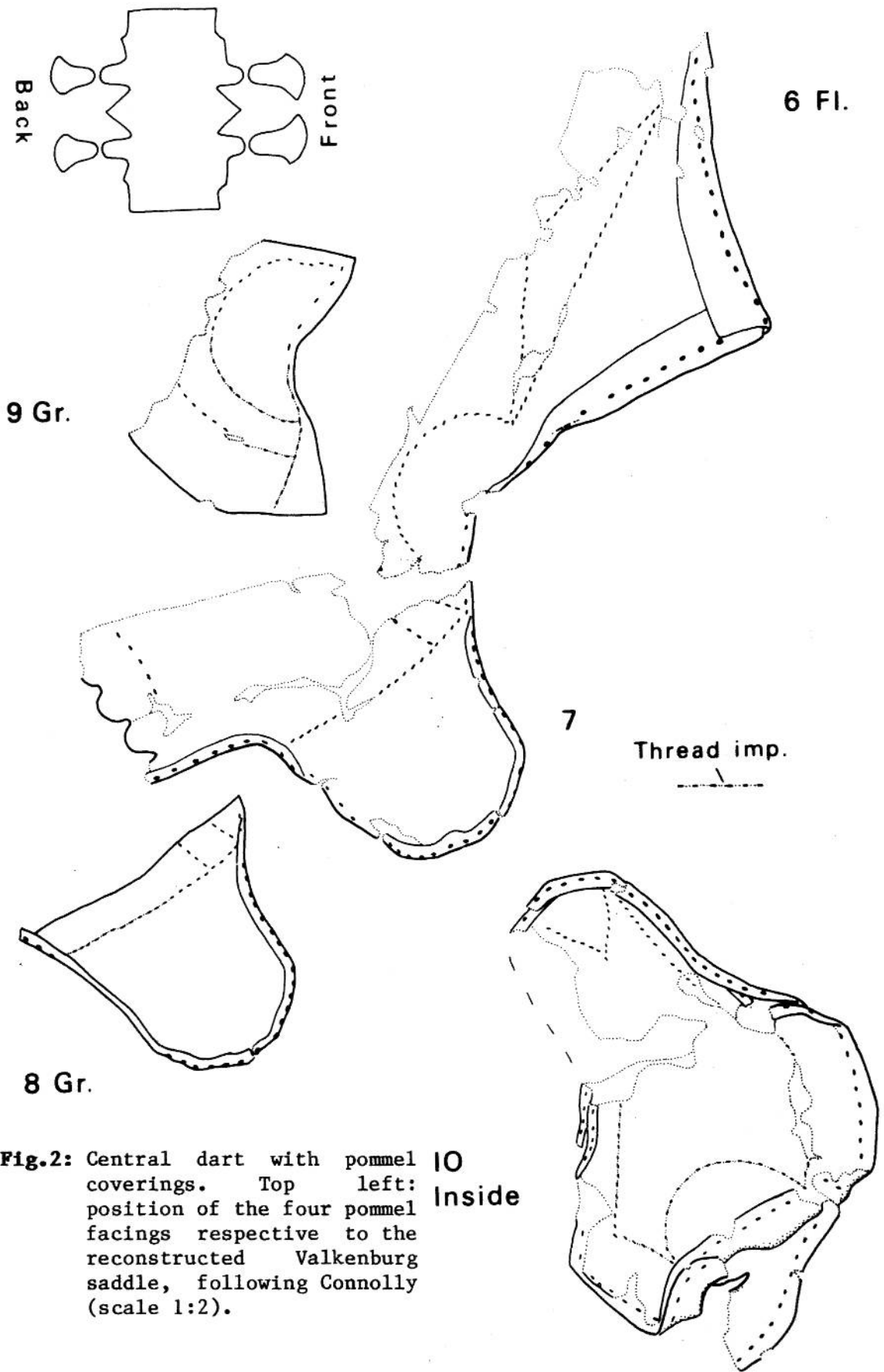
6. Triangular dart from centre front or back of saddle cover with lower edge continuing towards the base of a pommel. The projecting dart now has base 180mm and height 66mm but may have shrunk since excavation. The outer edges meet at an angle of 100 and are folded onto the fl. side with the upper edge over the lower. A single line of stitching goes through both thicknesses. No thr.imps. but from the fl. side the area between the stitching and the fold appears slightly depressed. On the gr. side the surface is less worn for a distance of 8mm in from the folded edge. Where the edge ceases to be folded a single line of stitching continues, again without any visible thr.imp.

Across the base of the dart is an inverted triangle of stitch holes joined at the lower end to a half circle approximately 60mm

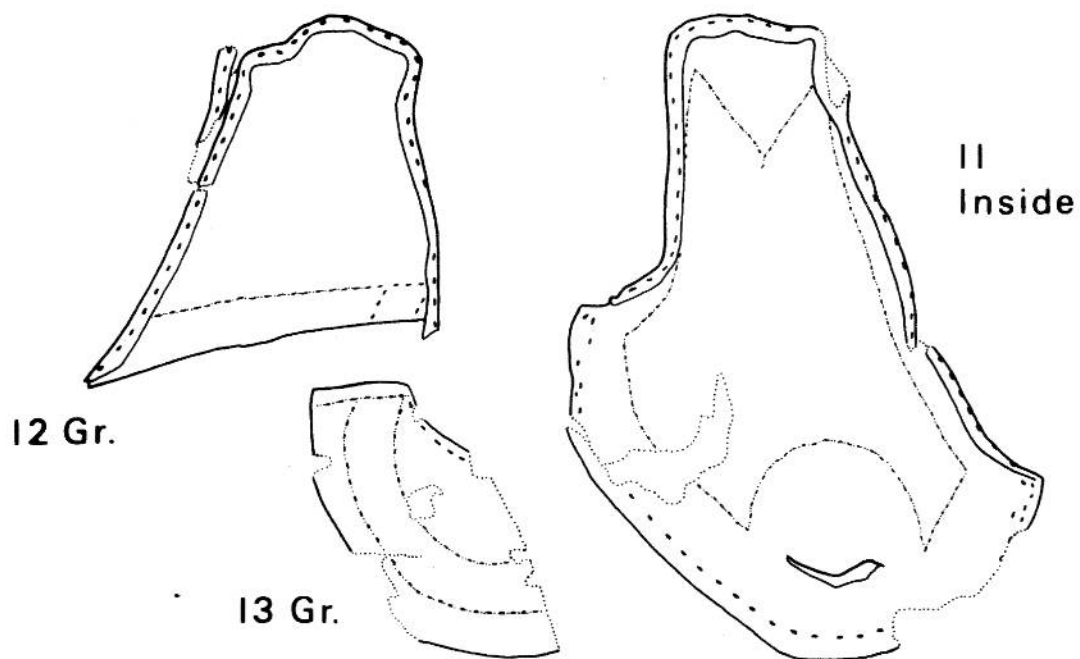
across. On the fl. side the whole area defined by this stitching is darker and shows little sign of wear, suggesting it was covered by applied pieces. On the gr. side the stitching has occasional faint thr.imps. The grain surface is very cracked and abraded in this area (less so on the dart itself) and this may explain the lack of a better thr.imp. The LH edge, though now torn in places, was originally cut in a reasonably straight line. At its lower end this piece joined 7, though damage to both pieces has made the join now not a perfect one. L.(219)mm. W.(93)mm. Thickness 1.5mm. Conserved.

7. Pommel backing with short length of adjacent edge. Width across base of pommel 85mm; height 70mm. Outer edge folded onto fl. side with a single line of stitching running along the fold or just inside it. The curving edges have no thr.imp. under the fold although the straight stretch to the left does appear to. A line of stitching across the base of the pommel and two slanting lines at the end adjacent to 6 have thr.imps. on the gr. but not on the fl. side. The present LH end appears scalloped but in fact has torn along a line of curved slits like those found on 1 and only their upper edge remains. Above is a line of stitching with a thr.imp. (just) on the gr. side. The upper edge of 7 has been cut and when 6 and 7 are joined (Fig.3) the line is continuous across both pieces. L.(135)mm. W.(105)mm. Thickness 1.5mm. Conserved.
8. Has the form of a pommel backing but the straight edge appears original, not cut or torn off. Other edges folded onto the grain side with stitching along the apex and a continuous thr.imp. under the fold. The stitch holes exactly match those on 7: 8 was sewn inside it to give extra strength to the pommel backing. The edges of both pieces were folded as one, so that when they were stitched to the facing (10) the thread was in contact with 8 not 7. A single line of stitching running across the base corresponds to that on 7. It would have held the extra piece in place when the edges were sewn. This stitching has a thr.imp. on the gr. side at the LH end but it disappears on the right. Nor are there any impressions on the two short slanting rows. Another piece (9) has covered this end. L.75mm. W.(max.)90mm (min.)55mm. Thickness 1mm. Conserved
9. Reinforcing piece: LH edge partly cut, partly torn, the other edges original. A half circle of stitch holes approximately 55mm across has thr.imp. on gr. side. Below is a further arc also with thr.imp. The final holes in each row and the straight stitching cutting across their RH ends correspond to stitching on 7 and 8. The central half circle matches that on 6, though 6 has no outer circle. As shown in Fig.3 (bottom) 9 was sewn over 6,7 and 8 to reinforce a point of stress between the projecting dart and pommel backing.

Along the RH edge (Fig.2) of 9 the stitching is of three sorts. At the upper end the piece was secured under the folded edge of 6 and there are no thr.imps.; midway between 6 and 7 a thr.imp. appears where for about 20mm the edge was folded inside that of 7 and incorporated into the seam around the pommel. Lastly the stitching becomes more closely spaced and is part of the line holding 7 and 8 together. 9 has a thr.imp. where it overlaps 8: on 8 the area of overlap is indicated by a missing impression as

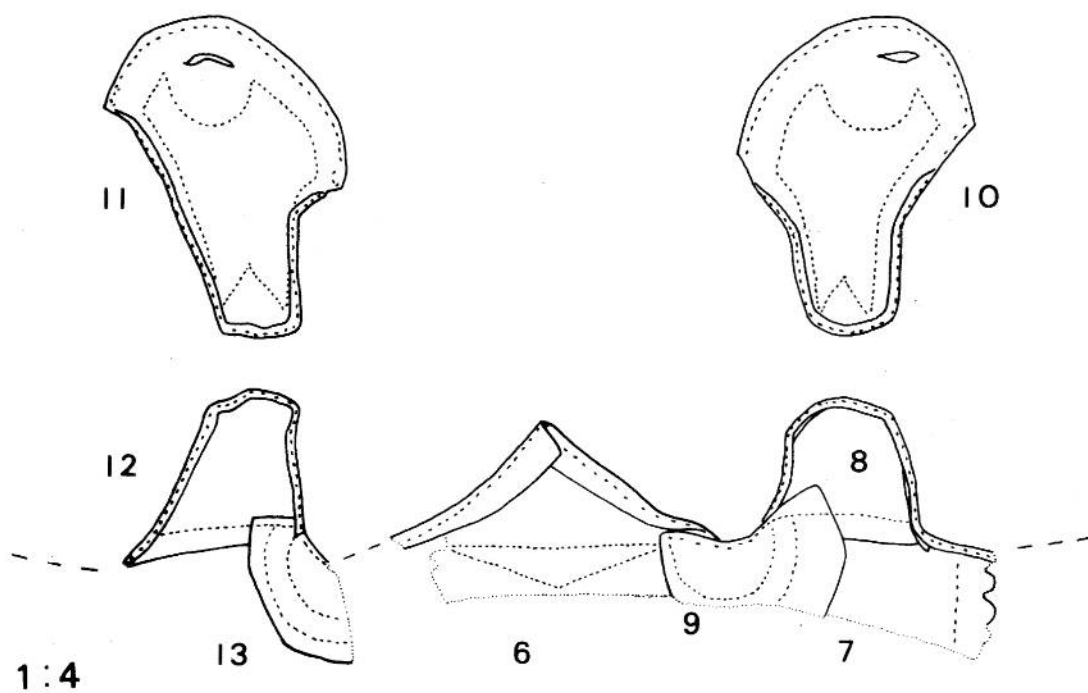


**Fig.2:** Central dart with pommel coverings. Top left: position of the four pommel facings respective to the reconstructed Valkenburg saddle, following Connolly (scale 1:2).



1:2

Relationship:



**Fig.3:** Above: pommel coverings and reinforcing piece. Below: original relationship of nos. 6-13.



described above. L.94mm. W.(72)mm. Thickness 1-1.5mm. Conserved.

10. Pommel facing made from two thicknesses of leather sewn with their fl. sides together. Both pieces are badly crumpled and torn but they have not separated. The inside is illustrated, showing a folded edge corresponding to the seam (Type I) around the top and sides of the pommel. Stitching runs down the centre of the folded portion. The leather is too fragile to allow a search for thr.imps. under the fold, but a single impression can be seen on the RH side just below the point where the fold ends. Stitching around the base has no thr.imps. and there is evidence of superimposed edges: on the inside an impressed line at 10mm from the edge and on the outside a glossy strip of unworn surface extending 7mm in from the edge.

Near the base are the torn edges of an oval slit some 30mm across; the lower edge is distended and turning outwards. As on 1 the slit is enclosed in a semicircle of stitching through both thicknesses. Stitching continues up both sides of the pommel again terminating in an 'M'. A thr.imp. is visible in places on the inside, the outer surface is very worn and shows no impressions. Possibly the thread itself had disintegrated before the saddle was discarded. L.170mm W.(max.)126mm (min.)54mm (estimate). Thickness 2mm. Conserved.

11. Pommel facing made from two thicknesses sewn with their fl. sides together. The pieces have now separated. Inside illustrated. The top is flatter and the LH edge more sharply angled than the corresponding edge on 10. Nevertheless the two are closely comparable in size and have identical stitching. A thr.imp. can be seen under the folded edge of 11. The bottom edge has a strip 7mm wide on the outside where it has been overlapped and protected from wear. This is exactly as on 10. On the inside there is also a suggestion of an overlying edge in the form of a slight ridge at about 7mm from the edge. However, some of the stitch holes on this side also have a faint thr.imp. between them. Thr.imps. are unusual here and it may be that these are 'ghost' impressions: i.e. not made by direct contact with the thread but through an intervening thickness of leather. This may happen when the thread is very tight, or the intervening layer only thin.

The internal stitching is as on 10 with thr.imp. on the inside and also on the outside but only over the lower third of the facing. There is a slit near the base some 23mm wide on the inside but 35mm wide on the outside (probably torn). As on 10 the lower lip is stretched and everted. L.171mm. W.(max.)130mm (min.)50mm. Thickness 2.5mm. Conserved.

12. Lining piece for pommel backing. Sewn grain side out like 8 to the inside of the saddle cover. Some fragments of the pommel backing are still sticking to the flesh side: one can be seen top left with its folded edge overlapping 12. Stitching round the edge matches that at the top of 11 and identical creasing on the two shows they were sewn together. Thr.imp. under the fold as on 8. The stitching at the base is a mirror image of that on 7 and 8: since all come from the same context they are probably left and right pommel

coverings from the same saddle. The straight row of stitching has a thr.imp. which stops just to the left of the slanting rows. To the right the grain surface is darker and less worn, suggesting another piece (13) has been sewn on top. L.82mm. W.(max)95mm (min.)48mm. Thickness 1.5-2mm. Conserved.

13. Reinforcing piece. Two concentric arcs of stitching and a straight line across the top all have continuous thr.imp. on the gr. side. At the top the stitching matches that on 12: this piece would reinforce the edge between the LH pommel backing and the triangular dart (Fig.3, bottom). Its top edge curves down to the right: the stitching here (four holes) corresponds to that on the pommel facing 11 just beyond the kink in its shorter folded edge. The RH edge is torn but originally must have continued onto 6 making a pair with 9. L.78mm. W.(45)mm. Thickness 1.5mm. Conserved.

### Discussion

In Fig.3 (bottom) the relationship between pieces 6-13 is set out. This is a view of the inside (fl. side) of the saddle cover with the pommel facings turned so that their ends meet the corresponding ends of the pommel backings. A direct comparison is possible with Peter Connolly's layout for a whole saddle (reproduced above in Fig. 2) even though he illustrates the grain side: the saddle is symmetrical about its centre line (front to back) and the outline shape of the pieces does not alter if it is flipped over.

That layout shows a significant difference between the pommel facings at front and back: all known facings have a 'tail', one of their lower corners which is more acute, or more elongated and which is lower than the other when the facing is upright; the saddle design arrived at experimentally by Connolly requires that the front facings are fixed with their tails pointing towards each other, while the back ones have theirs pointing away. The difference arises from the fact that the front pommels are splayed while those at the back are vertical.

In Fig.3 the tails of 10 and 11 are pointing outwards and the conclusion should be that this is the back of a saddle cover. However, 11 arguably has the form ascribed by Connolly to a front facing: 'both corners pointed', at least when compared for example with 14 below. Another objection is that, as in the case of 4, the pommel backings here are short (70 and 75mm) and are more similar in size and proportion to the short Valkenburg backing than to the longer one. If these pieces must come from the back then it seems individual elements from front and back are not so easily distinguished as we imagine.

Once again on this saddle there is evidence for Type I seams around the tops and sides of the pommels but not elsewhere. The folded edges of the triangular dart are unparallelled and may simply have been for extra strength. If these edges were 'bound seams' (see above, p.4) they did not need to be folded.

14-18 (Fig.4) Found below brushwood within the intervallum area of the Flavian fort. Thought to be from the early period of occupation i.e.

14. Pommel facing made from two thicknesses sewn with their fl. sides together. Patches of the outside layer are still sticking to the back of the inside, which has survived better. Some detached pieces of the outer layer were also recovered. The top has torn off and the upper LH edge is missing. Stitching across the top and down the RH edge has a continuous thr.imp. on the inside and is very close to the edge. On the detached top portion the edge is folding inwards, at first along the line of stitching then some way inside it. On the lower portion the edge is flat, though puckered in places.

Stitching down the LH side and across the bottom has faint (ghost?) thr.imps. on both sides. On the bottom (outside) the imp. runs as a continuous line fractionally above the stitch holes and may in fact be the impression of an overlaid edge. The LH edge (outside) also appears to have an overlay impression in the form of a short ridge running parallel to and some 3-5mm beyond the stitching.

From its flatter base and rounded LH corner this facing should be from a rear pommel; the direction of the 'tail' suggests the LH one. Internal stitching is similar to that on the other facings: in this case ending in an 'M' with the central dip more rounded than angular. This feature is shared with the Valkenburg facing.<sup>8</sup> At the lower LH corner is a slit 18mm wide with its upper edge slightly everted. L. (156)mm, reconstructed to 180mm. W.(max.)110mm (min.)(52)mm. Thickness 1.5-3mm. Unconserved.

15. Fragment of pommel backing. The position of the two slanting lines of stitching bottom right is consistent with its coming from a rear LH pommel and so belonging with 14. Although incomplete it seems to have been wider than 4 or 7 as the edge is not tapering in from the base. The LH edge is tending to fold inwards along its stitching. There is a continuous thr.imp. suggesting that this backing did not have a lining, unless this piece is it: in which case it was sewn in fl.side out unlike 8 and 12. Stitching across the base has no thr.imp. on the fl.side and would have been covered by a (further?) reinforcing piece. At the RH end the stitching suggests a piece with concentric half circles as on 9 and 13. L.(77)mm. W.(76)mm. Thickness 1mm. Unconserved.

- 16,17,18. Three fragments possibly from the same part of the saddle as 14 and 15 but whose position has not been determined. 16 has stitching like that on 15 and may also come from the pommel backing. 19. (Fig.4) Found in clay soil abutting a fence. Flavian, 78/79-91 A.D. CST B1619 L259.

Pommel facing made from two thicknesses sewn with their fl.sides together. The two layers have now separated. Both lower corners are angular so this should be a front pommel facing: from the direction of the tail a RH one. Stitching on the upper edge is very close to the edge as on 14, allowing only a shallow fold if any. In places the edge is flat but puckered. There is a continuous thr.imp. (inside) down both edges as far as the angle. Lower edge

is without thr.imps. on either side. On the outside is the imp. of a superimposed edge (8mm in from the edge) at the RH end only. Internal stitching with continuous thr.imp. on both sides as on the other facings. This one has only slight wear on the outside. Slit at base, 25mm long with its lower lip turning out. L.(151)mm. W.(max.)149mm (min)56mm (estimate.) Thickness 3-3.5mm. Unconserved.

#### Discussion

14 and 19 differ from the other facings in that their upper edges are not properly folded as required for a Type I seam. This may call into question whether that seam was used. The edges are folded in places, but where they are not, an explanation may be that with stitching so close to the edge the edges were bent rather than folded, and have subsequently flattened out in the ground. Both facings are of early date and could be products of the same workshop.

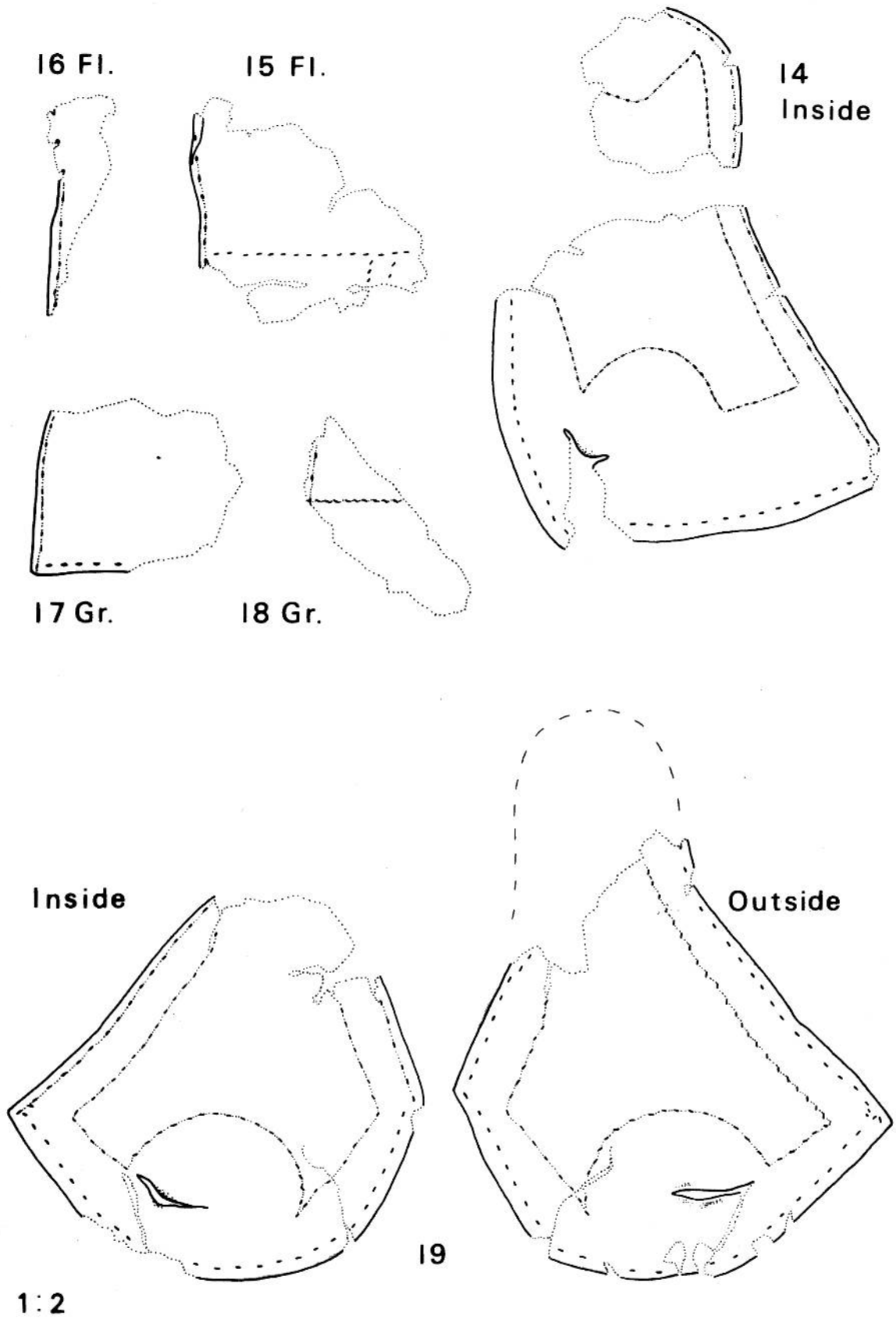
Four different saddles are represented by nos.1-19, ranging in date from 79 A.D. to at latest 150. The consistency of their design with that of the Valkenburg and Vechten saddles is striking and suggests a high degree of uniformity in this item of military equipment. Nevertheless the Carlisle pieces share details which differentiate them from the Continental ones. In every case the pommel facings are of double thickness and have a hole at the base. These holes occur on both front and back pommels and their edges are stretched outwards and downwards. Conceivably loads were attached to the saddle at its corners by straps through these holes; alternatively the breastplate and crupper attachments, shown by Peter Connolly as stitched to flaps under the saddle, might be fastened to the base of the pommels, or threaded through the cover at this point to be secured underneath the saddle.

On one saddle a double thickness was also used in the pommel backings and identical stitching on the other backing pieces (4,15) suggests a general use of linings. The Valkenburg saddle has continuous stitching at a distance from the edge indicating a double thickness, but without the Carlisle evidence this might be assumed to have been achieved with one continuous piece rather than in small overlapping sections. 9 and 13 are very similar to the reinforcing pieces used on tent panels and would not have been identified as part of a saddle had they not been found alongside the more recognisable parts.

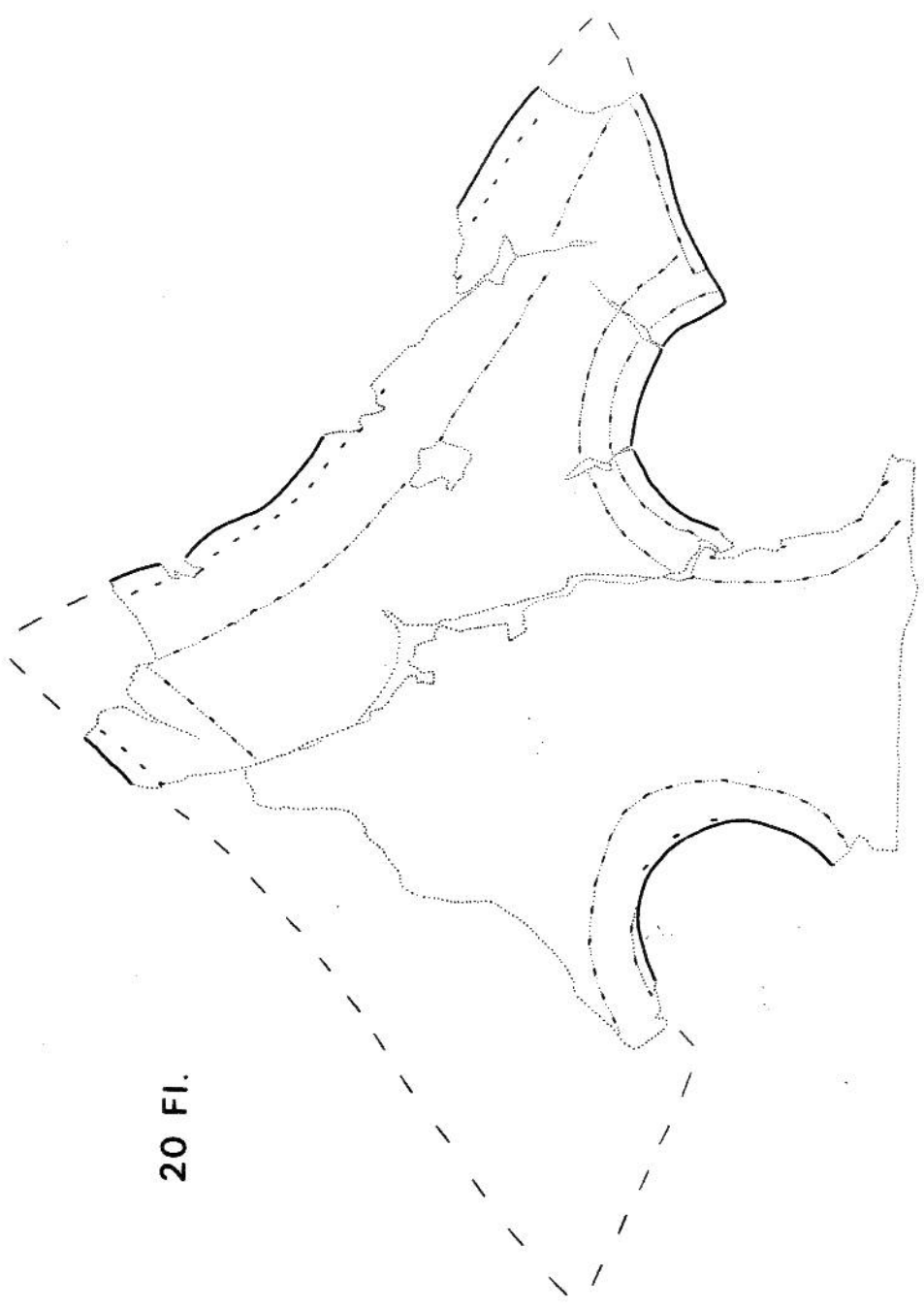
#### ii). CHAMFRONS

20. (Fig.5) Found in a deposit of clay soil and twigs in a narrow gap between buildings 80's - 91 A.D. CST B1560 L245.

Top of chamfron. Roughly triangular above two eye holes of approximately 70mm diameter. The holes are 75mm apart and measure approximately 140mm centre to centre. On the right the upper edge slants inwards to meet the eye opening; unless another piece was sewn on here this would be only partially enclosed. A line of stitching on the slanting edge may have joined it to a lower piece (lap seam): there is a thr.imp. on the fl. side and the impression of a superimposed edge clearly visible on the gr. Also one of the



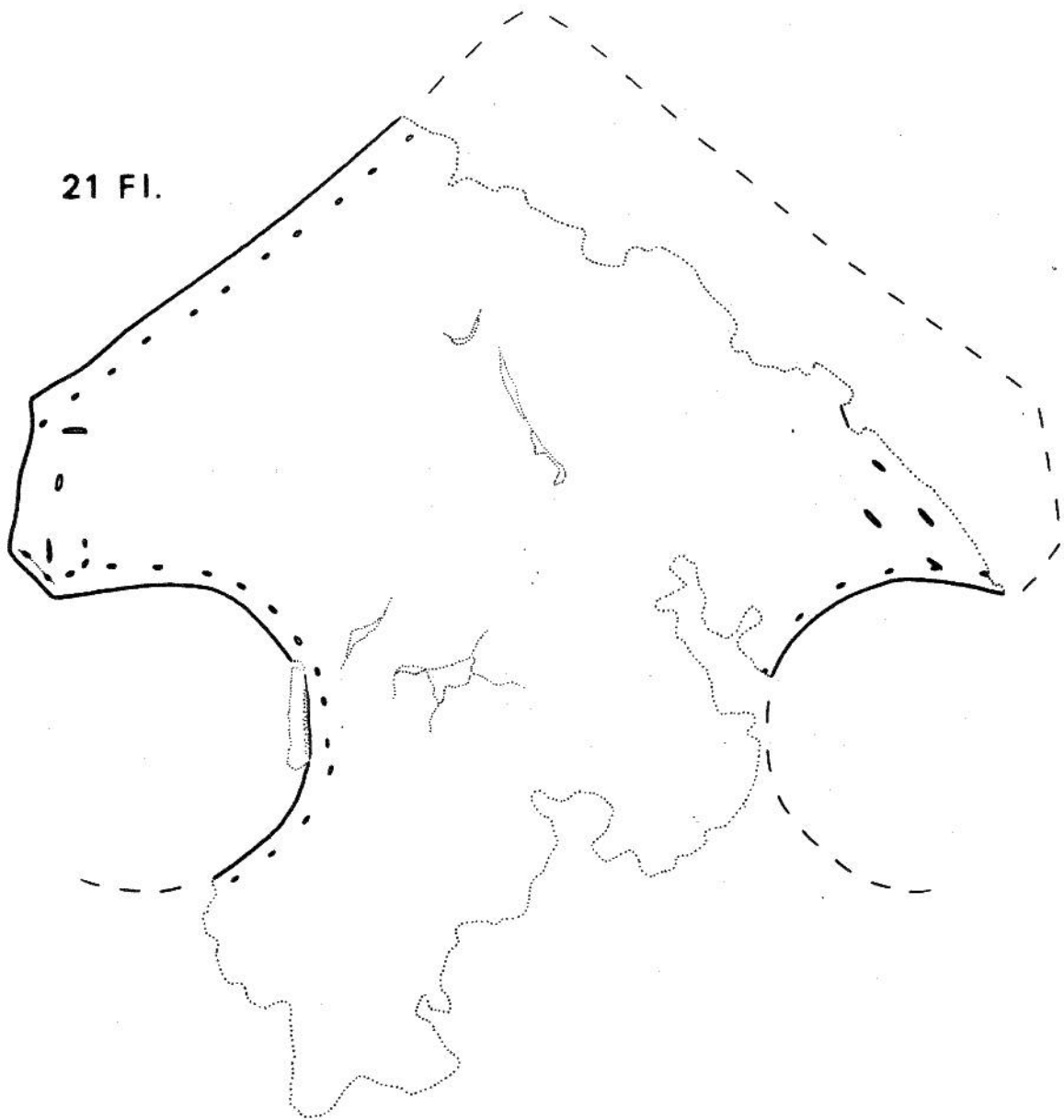
**Fig.4:** Pommel coverings.



20 FI.

1:2

Fig.5: Chamfron lining.



21 Fl.

1:2

**Fig.6:** Chamfron lining.

circles of stitching around the RH opening has a thr.imp. running down over the edge, suggesting it continued below.

The stitching around the eye holes and that set in from the upper edge suggest a double thickness of leather, with 20 as the inner layer or lining. The stitching along the upper edge itself has no thread impressions and the edges may have been bound. Height (225)mm. W.(261)mm, reconstructed 350mm. Thickness 1.5mm. Unconserved.

21. (Fig.6) From pit behind east tower of south gate of fort. Circa 90 A.D. ANN A4636 L574E.

Top of chamfron. Pointed? above two eye holes of approximate diameter 90mm, 130mm apart and measuring about 220mm centre to centre. As on 20 the openings are not completely enclosed. To the left of the LH one a short slanting edge with two stitch holes and thr.imp. on fl. could indicate another piece sewn on, as suggested for 20. On either side above the eye holes is a group of slits, perhaps for thongs, but the edges show no stretching. The arrangement of slits differs on the two sides. A single line of stitching on the upper edge and round the openings has no thr.imps. on either side and these edges may have been bound. There is an irregularity in cutting out on the LH opening: a projecting sliver of leather which is folding over onto the gr. side. The fact that this has not been removed also suggests the edges were bound. Height (290)mm. W.(285)mm, reconstructed 304mm. Thickness 1.5mm. Unconserved.

iii) ?HORSE ARMOUR

22. (Fig.7) From spoil dug out of road works. Roman levels are heavily truncated at this point and a Flavian or early second century date is likely. ABB A61 L16.

Thick hide. Top edge original with slightly concave curve and row of small holes (up to 2mm diameter) set close to the edge. At the LH end are two larger holes (10 by 7mm) and part of a third. Below is a wavy line of the smaller holes, many containing a small copper alloy stud or rivet with a circular domed head on the fl. side. No studs appear in the upper row but on the gr. side one of the holes has a circular impression around it of similar size to the heads on the fl. side. It seems likely that all the studs/rivets had heads on both sides originally, assuming that the grain side was the outside and a decorative effect intended. Why they should now all be missing from the grain side is a mystery.

In the centre of the gr. side is a mass of crisscrossing shallow straight cuts and scratches. These seem ancient and may be associated with one period of the object's use. The thickness of the leather suggests a protective function and the decoration a more than workaday one. Armour for a horse, or for a man were possibilities suggested by Carol van Driel-Murray. The larger holes could accommodate wooden dowels or iron pegs; there are no marks



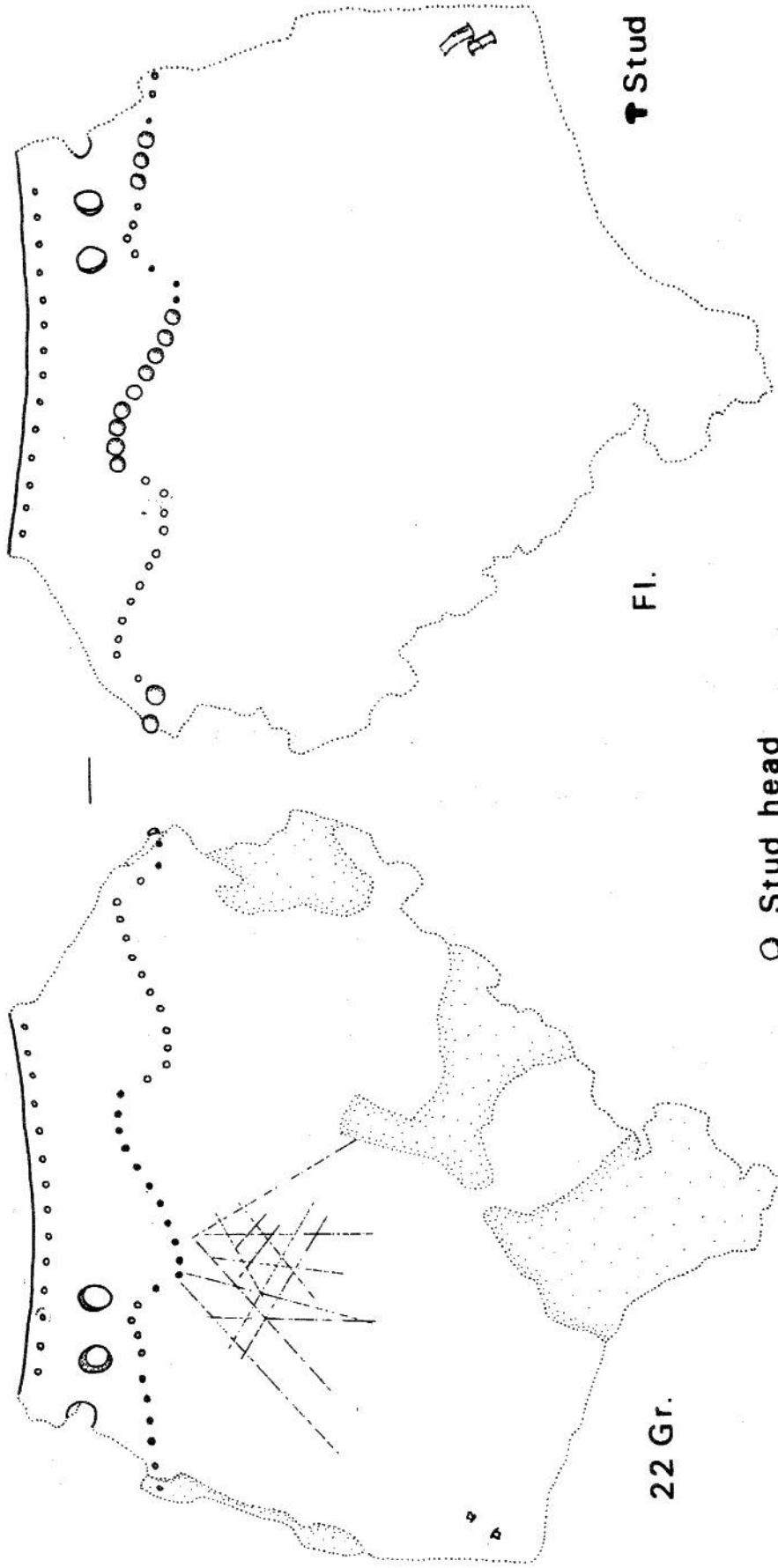


Fig.7: Leather armour.

around them to suggest cords or thongs were threaded through.  
L.(226)mm. W.(223)mm. Thickness 4-6mm. Unconserved.

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#### NOTES

1. CONNOLLY, 1987.
2. CARUANA, 1986.
3. MCCARTHY & DACRE, 1983.
4. GROENMAN-VAN WAATERINGE, 1967.
5. Ibid., 113, Fig.38,9.
6. Ibid., 107, Fig.35.
7. CONNOLLY, 1987, Fig.2, 21, reproduced in outline in Fig.2 below.
8. GROENMAN-VAN WAATERINGE, 1967, 107, Fig.35,2).

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