

The 'Abdasian' Manica

Abdas

The find shown opposite has been dated to the earlier half of the 21st Century AD. It was originally excavated from a cardboard box filled with a strange assortment of oddly shaped pink and white flakes of an unknown fragile material.

The find was a little too cold and sharp to the touch in its original form, so any sharp edges were rounded and filed. The *manica* was then lined with skin from my favourite pet Baatavian sheep which was sewn to the riveted leather straps that hold the *manica* together. A very thick thread was used with a darning needle in a fairly loose stitch to allow some room for movement.



The 'Abdasian' Manica.

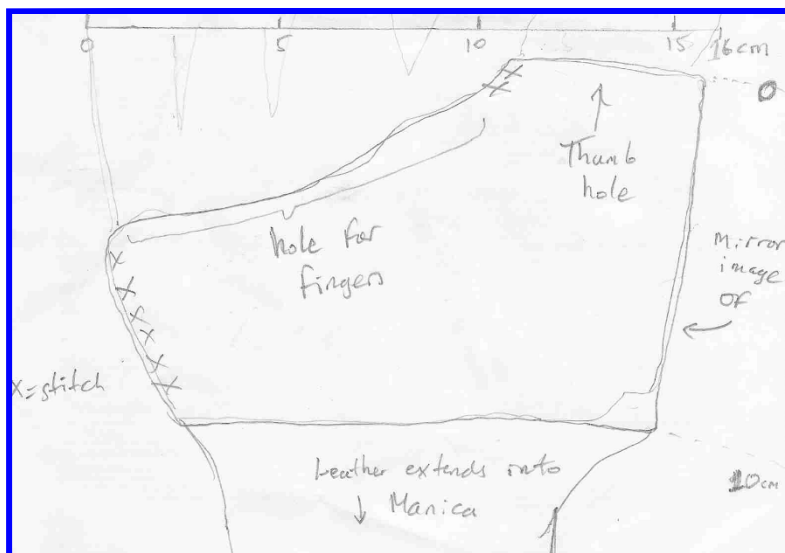
In terms of attaching the *manica* to an arm, it was decided against threading leather thongs through the holes that run the length of the *manica*, as such thongs break too easily and rethreading it continually is a highly unwelcome prospect! Rather what was needed was something that could be easily put on and removed unaided. To that end, two leather straps and their associated "D" rings were fixed at the wrist and below the elbow, with the buckle on the upper edge. The two "D" ring straps can provide a tight fit when the strap is passed twice through the ring (see above). The buckle provides a very secure fit around the upper arm.

After wearing *manica* #1 for a while it soon discovered that it had a tendency to slip down. To secure the *manica* to the upper arm the inside was lined with leather through which was run a thong. The thong can then be tied to the rings of *lorica hamata* (ringmail). In addition, two bronze hooks were added to keep the *manica* in place. The hooks pictured opposite were too small and need upgrading to something meatier! Otherwise, this suspension system works well.



The Manica suspension arrangement: note the hooks.

At the business end of the arm guard was added a leather glove to provide both protection from the metal and help prevent the *manica* from sliding around the arm (see bottom right). A rough sketch of the glove "design" is shown below.



The Manica slips round the hand.

The 'Abdasian' *Manica* (cont.)

Abdas



Left: The leather 'thumb guard' attached to protect the back of the hand.

Right: The *Manica*, and all its component parts, worn by Abdas (Mike Haxell) .



The "thumb guard" provided some entertainment. Initially, Being initially placed over the thumb, it was found to be impossible to hold a weapon. Instead, the glove was attached so that the "guard" protected the back of the hand. This arrangement appears to work well!

Danger! *Manica* at Work. Generally, the *manica* is relatively easy to put on, wear and remove. The author wore the arrangement throughout the march through Rome celebrating the eternal city's birthday in 2008 without too much discomfort. However, blood was drawn from Abdas' neighbour, Verax (Mark Littlewood), whose hand was grazed during the marching (dangerous stuff armour!) It was also on this march that the inadequacy of the hooking system was discovered, with the *manica* tending to part company from the *lorica hamata*. Apart from it being difficult to tie helmet chin straps while wearing a *manica*, because this requires extreme flexing of the armour, it is a distinct advantage in cold weather keeping your right arm warm!

The Carlisle-Newstead *Manica* Reconstruction

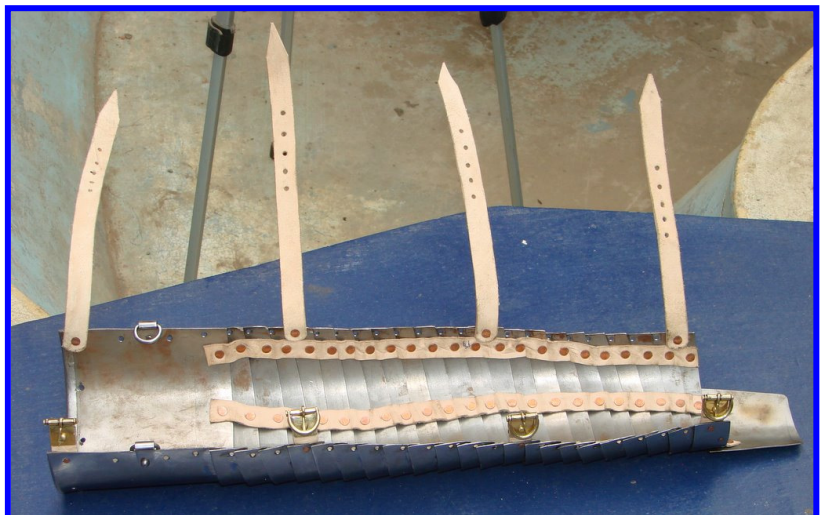
Peronis

Using the same reconstruction pattern based on the finds from Carlisle and Newstead, this *manica* differs only by the fact that the material is 22 gauge steel as opposed to cupric alloy and that the hand protection is afforded by a single plate rather than three extra lames. The Newstead archaeological report states clearly that there was evidence of leather lining adhering to some of the lames, so this is the approach taken to line this reconstruction.

Following Abdas' (Mike Haxell) experiences with lining a *manica*, Peronis (Adrian Wink) offers an alternative solution. While we can recover the artefacts, knowing how our forebears used them relies on such experimental archaeology.

By its very nature the *manica* needs to be quite flexible, so goat leather was chosen for its much higher strength and flexibility over calf or cow leather. No padding was added.

Construction. As with Abdas' version, leather straps were also chosen as the fastening mechanism. Four straps, as shown opposite, were positioned at intervals along the lames so that two support the *manica* on the upper arm and two on the forearm. No evidence was forthcoming from either Carlisle or Newstead for the use of buckles on the *manica* - this is conjectural. The buckles used were of a

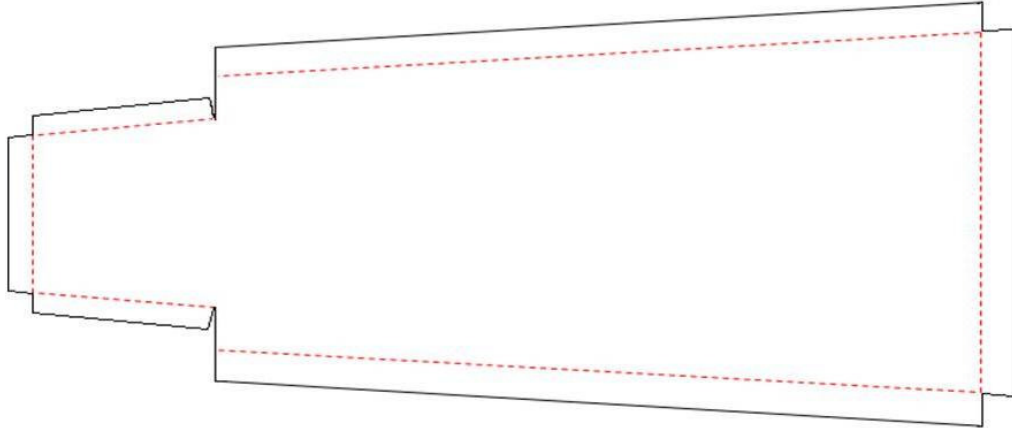


The Carlisle-Newstead *Manica* (cont.)

Peronis

contemporary Roman design adopted from the Corbridge Type A pattern segmented plate armour.

Once the strapping was in place, the lining could be applied having been cut from a single piece of goat leather to this pattern:



It was attached only at the outer edges using plaited sinew for the lacing as this is incredibly strong and unlikely to wear when rubbing against the holes in the lames. The lacing was passed through the holes at the end of each lame. For the hand lame, the lining was stitched. No glue was used in attaching the lining, as it still needed to be as flexible as possible with the resultant loose fit allowing a great deal of movement.



The author's first full day of testing the resulting *manica* was as part of a display coinciding with the Emperor Hadrian exhibition at the British Museum. Equipped as the mid-2nd Century AD auxiliary soldier of the Danubian *Limes* (shown opposite), a long-sleeved *tunica* was worn on the day. This proved to be quite a blessing as the lining gripped the fabric of the sleeve with absolutely no slippage of the *manica* occurring. This led to question the use of the two suspension rings on the upper arm lame. They were not needed to keep the *manica* in place either with attached straps or by attaching it to the body armour. In a short-sleeved *tunica*, the story may have been significantly different!



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Manicae - a Third Encounter

The idea that a soldier (legionary or auxiliary) could thrust the *gladius* or *spatha* beyond the protection afforded by his shield with impunity is clearly ridiculous in an environment where the enemy is desperately trying to hack off or stab any exposed body part. In the cut and thrust of the fighting some extra protection for the exposed bits is obviously necessary - hence the *manica*!

The surviving archaeology does not offer much indication of how the *manica* was worn or strapped to the arm. With little help available, an experiment from first principles seemed in order.

Since it is generally agreed that the *manica* was used purely in combat, it stands to reason that the wearer should be able to fight all day without any danger of it coming loose and slipping down the arm when the sword is repeatedly thrust forward. There have been finds of *manicae* from all over the empire, but the major sculptural reference we have for its use by Roman soldiers are the Adamklissi metopes. Unfortunately these provide little evidence for how they were actually worn, which leaves only one other group known to use *manicae*: gladiators. Thankfully there are quite a few sculptural and mosaic references to *manica* use by gladiators upon which to base a reconstruction.

Using leather thongs the *manica* was laced into a soft leather sleeve stretching from the point of the shoulder to the wrist with a separate (triple thickness) pad covering the hand to the knuckles. The top of the sleeve features a leather loop through which a baldric type shoulder harness anchors the whole assembly to the shoulder. The *manica* is laced to the arm using more leather thongs that are passed under the two outer internal straps between the lames. The last lame (at the top of the arm) and the one over the wrist was opened out and padded at the top with leather to facilitate ease of movement and prevent chafing. Finally steel plates were sewn into the pad over the knuckles and into the upper sleeve to give a bit more protection and stiffness.

The finished reconstruction is shown in the images opposite. The top and middle images show the shoulder harness from the front and rear. This harness is concealed (and protected) by the shoulder doubling when fastened in place (bottom right).



Manica IV - This Time It's Personal!

Caballo

Caballo's (Paul Browne) first attempt at attaching a *manica* was to cross thread a leather thong using a cloth and a sheepskin lining - one with a strap across the shoulder, as shown overleaf. This arrangement was tried because, as previously reported, no buckles have been found with, or could be attributed to, the Carlisle-Newstead *manica*. As can be seen, the whole thing looks very untidy and, quite simply, doesn't work as the leather thongs are gradually severed by the lames' movement when worn.

While the lacing was ineffective, the sheepskin lining provided padding without major constriction of movement.

The second attempt used straps, a sheepskin lining sewn into the *manica*, and a shoulder strap. As *Peronis* (Adrian Wink) found, the four straps work much better while the shoulder strap offers an additional "belt and braces" support from the danger of the *manica* slipping down the arm. As for the D-rings - it seems that they are to provide some support either using a hook (refer to *Abdas'* proposed solution) or a further strap.

The only method not tried (to the author's knowledge) was suggested by *Crispus* (Paul Geddes) using thongs tied individually in the manner of a *lorica* fastenings. Such a method would leave a "fringe" as seen in some (but not the majority) of gladiator images shown wearing *manicae*.

Conclusion? The strap method reported by *Peronis* makes huge sense, and the goatskin lining also works very well. Conveniently, a fully fitted version following this design is available from Armamentaria (http://www.armamentaria.com/store/index.php?main_page=product_info&cPath=11&products_id=163)

Using a sheepskin lining, while a valid alternative, will require some form of extra suspension, either hooks or a strap, as it does not grip like goatskin. A strap, of course, could easily be used - either a simple strap, *Karus'* harness design, or a version using a pectoral disc - to keep the whole *manica* in place. One thing is certain, all soldiers through the ages have tailored their kit and the various practical experiments to reconstruct a serious piece of Roman military kit have been a challenge (and great fun!).

