

## Roman military personal equipment – Lorica\*

### Lorica segmentata

A reenactor dressed as a Roman soldier in lorica segmentata. The lorica segmentata was a type of armour primarily used in the Roman Empire, but the Latin name was first used in the 16th century B.C. (the ancient form is unknown). The armour itself consists of broad ferrous (iron or steel) strips ('girth hoops') fastened to internal leather straps. The strips were arranged horizontally on the body, overlapping downwards, and they surrounded the torso in two halves, being fastened at the front and back. The upper body and shoulders were protected by additional strips ('shoulder guards') and breast- and backplates. The form of the armour allowed it to be stored very compactly, since it was possible to separate it into four sections. During the time of its use, it was modified several times, the currently recognised types being the Kalkriese (c. 20 BC to 50), Corbridge (c. 40 to 120), and Newstead (c. 120 to 250) types.

So far as is known, only legionaries (heavy infantry of the Roman Legions) and Praetorians were issued with the lorica segmentata. Auxiliary forces would more commonly wear the Lorica hamata which is mail (frequently called chainmail) or Lorica squamata (scale armour).

### Lorica hamata

From second century AD, the Lorica hamata is a type of chainmail armour used during the Roman Republic at late periods as a standard-issue armour for the secondary troops (Auxilia). They were mostly manufactured out of bronze or iron. It alternated with rows of closed washer-like rings, and riveted rings running horizontally, this produced a very flexible, reliable and strong armour. Each ring had an inside diameter of about 5 mm, and an outside diameter of about 7 mm. The shoulders of the Lorica hamata had flaps that were similar to the Greek 'Lithorax' which ran from about mid-back to the front of the torso, and were connected by Brass or Iron hooks which connected to studs riveted through the ends of the flaps. Several thousand rings would have gone into one Lorica Hamata.

The knowledge on the manufacturing of mail may have come from the Celts. There were several versions of this type of armour, specialized for different military duties such as skirmishers, cavalry and spearmen.

Although labor-intensive to manufacture, it is thought that, with good maintenance, they could be continually used for several decades. However modern testing has shown that this form of armour provided very little protection from enemy arrows to its users. It was later replaced by the more famous Lorica Segmentata that afforded greater protection for a third of the weight.

### Lorica squamata

Detail of a fragment. Each plate has six holes and the scales are linked in rows. Only the "lower most" holes are visible on most scales, while a few show the pair above and the ring fastener passing through them. The Lorica squamata is a type of scale armour used during the Republic and at later periods. It was made from small metal scales sewn to a fabric backing. It is typically seen on depictions of standard bearers, musicians, centurions, cavalry troops, and even auxiliary infantry, but could be worn by regular legionaries as well. A shirt of scale armour was shaped in the same way as a lorica hamata, mid-thigh length with the shoulder doublings or cape.

The individual scales (squamae) were either iron or bronze, or even alternating metals on the same shirt. They could be tinned as well, one surviving fragment showing bronze scales that were alternately tinned and plain. The metal was generally not very thick, 0.5 mm to 0.8 mm (0.02 to 0.032 in) perhaps being a common range. Since the scales overlapped in every direction, however, the multiple layers gave good protection. The size ranged from as small as 6 mm (0.25 in) wide by 1.2 cm tall up to about 5 cm (2 in) wide by 8 cm (3 in) tall, with the most common sizes being roughly 1.25 by 2.5 cm (1.5 to 1 in). Many have rounded bottoms, while others are pointed or have flat bottoms with the corners clipped off at an angle. The scales could be flat, or slightly domed, or have a raised midrib or edge. All the scales in a shirt would generally be of the same size; however, scales from different shirts may vary significantly.

The scales were wired together in horizontal rows that were then laced or sewn to the backing. Therefore, each scale had from four to 12 holes: two or more at each side for wiring to the next in the row, one or two at the top for fastening to the backing, and sometimes one or two at the bottom to secure the scales to the backing or to each other.

It is possible that the shirt could be opened either at the back or down one side so that it was easier to put on, the opening being closed by ties. Much has been written about scale armour's supposed vulnerability to an upward thrust, but this is probably greatly exaggerated.

No examples of an entire lorica squamata have been found, but there have been several archaeological finds of fragments of such shirts and individual scales are quite common finds - even in non-military contexts.

[edit] Other

Light infantry, especially in the early Republic, were entirely unarmoured. If they wore any armour at all over their tunic, it would likely have consisted solely of stiff leather. This was both to allow swifter movement for light troops and also as a matter of cost.

\*- Lorica is the roman ancient name of the land of Viriathus, the Lusitanian hero in the fight against romans invaders. Lorica is the actual Loriga, Portugal.

