

## CHAPTER XIV

### Transport and Harness

IN some of the forts on the Wall of Hadrian there can still be seen upon the threshold of the gateways the ruts that tell of wheeled vehicles. At Newstead the destruction of the buildings has been far too complete to afford any parallel, but the evidence of wheeled traffic comes to us in a different, but not less convincing, form. Two wheels, almost entire, were found in Pit XXIII, and a third in Pit LXX. Spokes of wheels or other wooden fragments came from Pits LIV, LXV, and LXXXII, while among the hoard of iron objects in Pit XVI were twenty-three hub-rims, three hub-linings and some broken fragments. A portion of a wheel tyre in process of being manufactured into something else was taken from the same receptacle. A rusted tyre came from the ditch of the South Annexe, and a portion of another from Pit LVII at the Baths. Both hub-rims and hub-linings were found in the ditch of the early fort, and they not infrequently occurred, more or less corroded, near the surface.

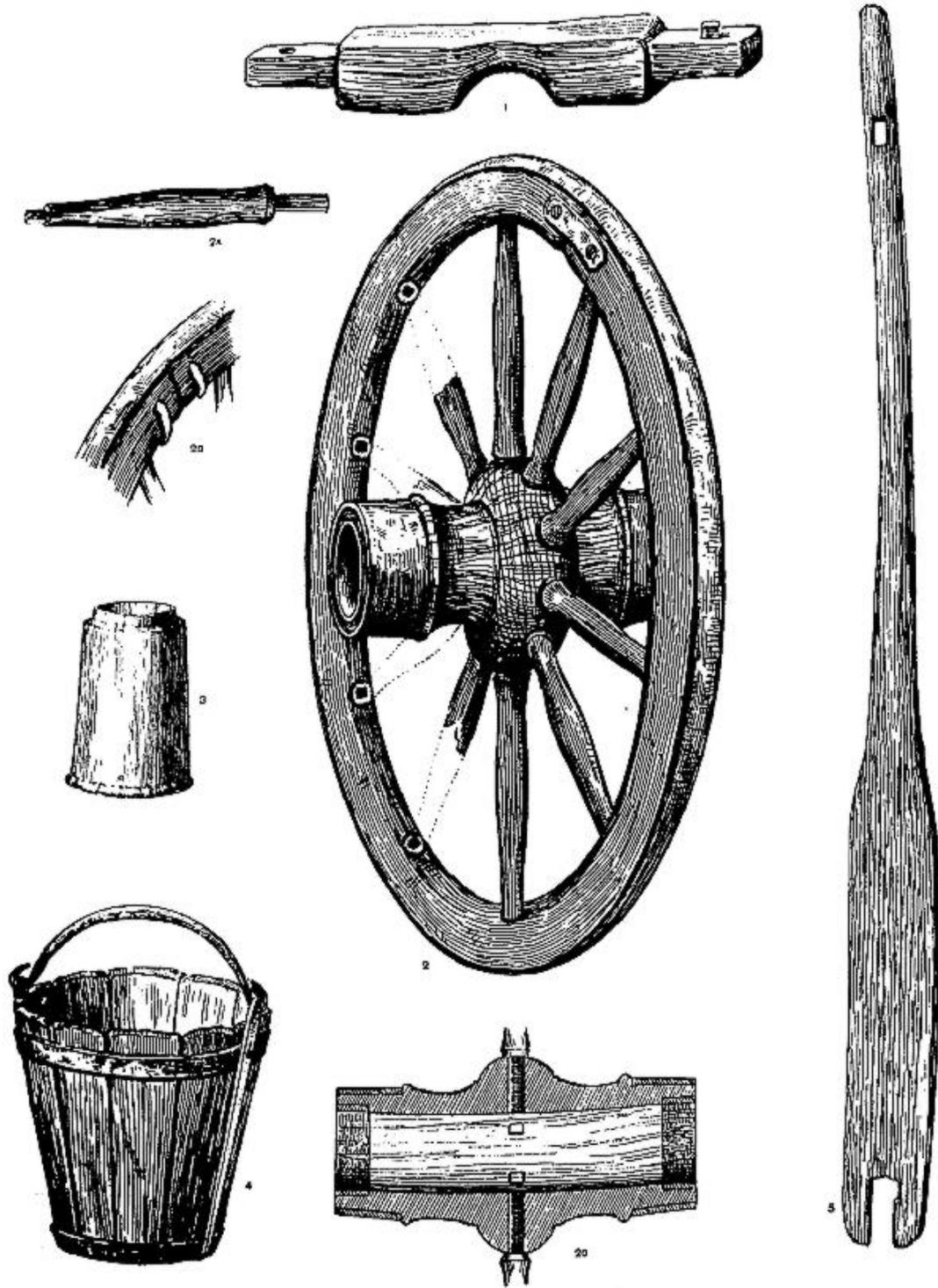
#### Wheels

The wheels from Pit XXIII, one of which is illustrated in Plate LXIX., Fig. 2, have an outside diameter of three feet, while the nave measures  $15\frac{1}{2}$  inches from end to end, and has a diameter of  $8\frac{1}{2}$  inches at the centre and  $5\frac{7}{8}$  inches at the ends. The felloe is made of a single piece of ash, bent through artificial softening so as to present only a single joint; the ends are bolted together with an iron plate (Fig. 2 b). The spokes, probably of willow, are eleven in number. They are fitted into the felloe with a round tenon and into the hub with a square tenon (Fig. 2 a); they are beautifully formed and show a neat bead, half an inch from the point of insertion into the hub. The hub, which is of elm, appears to have been turned on a lathe (Fig. 2 c). At both ends it is fitted with an iron ring 3 inches deep, and at one end a strong iron ring forms a lining inside the hub to protect it from wear. This ring is kept in position by a pair of curved loops projecting from

PLATE LXIX. WHEEL FROM PIT XXIII AND WOODEN OBJECTS

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1. Yoke. Pit XXI.	322
2. Wheel. Pit XXIII.	292
2A. Spoke of wheel, showing tenons.	292
2B. Felloe of wheel, showing method of jointing.	292
2C. Section of hub of wheel	292
3. Box. Pit XL.	311
4. Bucket with iron mountings. Pit XXIII.	310
5. Steering oar. Pit LXV.	313

All the objects figured are of wood.



its upper surface, and the inner edges of the loops are sharpened so that they could be driven into the wood of the hub. The iron tyre of the wheel is  $\frac{3}{8}$  of an inch thick and  $1\frac{3}{4}$  inches in breadth. Specimens of the hub-rims and linings are illustrated in Plate LXX. Fig. 5, which belongs to the former class, is from Pit XVI. Linings are represented by Fig. 9, from the same pit, and by Fig. 10, from the ditch of the early fort.

The only wheel of a similar character hitherto known in Scotland came from the fort at Bar Hill. Slightly smaller in size, it shows the same features of construction—the long hub, the comparatively slender spokes and the felloe composed of a single piece of bent ash. Messrs. Macdonald and Park, in their account of Bar Hill, have pointed out the resemblance between this wheel and the nave and spokes found in the pre-Roman Lake-village of Glastonbury, referring at the same time to the ten-spoked wheel discovered in the year 1882 at La Tène, in which also the felloe was formed of a single piece of ash, bent.<sup>1</sup> At the same time they indicated the possibility that the Bar Hill wheel is a product of native workmanship. That this is so is more than probable, though the exact nature of the vehicles to which such wheels belonged and the seat of their manufacture are alike unknown to us.

The discoveries at La Tène and at Glastonbury, both sites which are pre-Roman, only bear out the evidence we have from early writers to the effect that before the Romans reached Central Europe and Britain, the natives were possessed of wheeled vehicles, and of vehicles which, like the war chariots—the *covinnus* and the *essedum*—were capable of being driven rapidly. Indeed, the vocabulary used by Roman writers in speaking of the wheeled transport of the Empire is largely Celtic in its origin. Such words as *benna*, *carpentum*, *carrus*, *cisium*, *colisatum*, *covinnus*, *essedum*, *petorritum*, *reda*, which are applied to a considerable variety of vehicles—carts, waggons, war-chariots and light cars for rapid movement—can all be traced to a Celtic origin. [2] It is no doubt tempting to see in these wheels the remains of some Caledonian chariot captured before the walls. But, however much the suggestion may appeal to our imagination, we have no means of proving it. We shall probably do well to rest content with the view that they belonged to more prosaic vehicles. We have no strictly British or Gaulish representation of chariots, but we possess a series of reliefs on grave-monuments from Igel and Neumagen on the

1 *The Roman Fort, on the Bar Hill* p. 94.

2 See Holder, *Alt-keltischer Sprachschatz*, Leipzig, 1897. I am indebted to Professor J. B. Keune of Metz for drawing my attention to this subject.

Moselle, and from Anon in Belgium,<sup>1</sup> which have preserved to us many representations of the carts, the waggons and the lighter vehicles of the native population—a people over which the Roman civilisation had doubtless to some extent laid its veneer. That such carts were employed for transport is shown by the reliefs on the Trajan column.<sup>2</sup> Perhaps, then, the clearest inferences we can draw are that there was wheeled transport with the force at Newstead, and that, as early as the first occupation, the roads which the army followed admitted of its use.

Two types of wheels were noted at Bar Hill, and the same types occurred again at Newstead. At the bottom of Pit LXX, which, from its pottery, had evidently belonged to the later period, lay the remains of a large wheel. It had been, on the whole, coarser and heavier than the wheels found in Pit XXIII, and it was also less well preserved. The hub was broken in two and most of the spokes had been displaced. Enough remained, however, to indicate clearly that it had resembled the wheel found in the outer ditch at Bar Hill. When complete it must have had a diameter of about 3 feet 5 inches. No iron mountings were found with it. The nave measured 16 inches in length, and had a diameter of 9 inches in the centre. The spokes, which must have been twelve in number, were nearly square. At the point of junction with the hub they measured  $2\frac{1}{2}$  by  $2\frac{1}{4}$  inches, tapering slightly towards the felloe. They were 12 inches long, and were fixed into the hub with a square tenon, while the outer ends passed right through the felloe. Whether they had originally projected a little beyond the felloe was difficult to say, but the extremities were worn as though they had not been covered by any protecting rim. Unlike the felloes of the wheels from Pit XXIII, the felloe of this ruder wheel was made in six sections, on treads attached to one another by wooden dowels. The length of each tread was 1 foot 10 inches and the thickness  $3\frac{1}{4}$  inches, tapering to  $1\frac{1}{2}$  inches where it touched the ground. The projecting dowel measured  $1\frac{1}{4}$  by  $\frac{7}{8}$  inches.

### **Linch Pins**

Another attribute of wheeled vehicles, several obvious specimens of which came to light, was the linch pin, which was used for preventing the wheel slipping from the axle (Plate LXX., Figs. 1, 3, 6 and 8). These are made of iron, and are commonly about 6 inches long. At the upper end they are hammered out into a flat plate rudely oval or circular in form, in the centre of which projects a loop through which there was probably

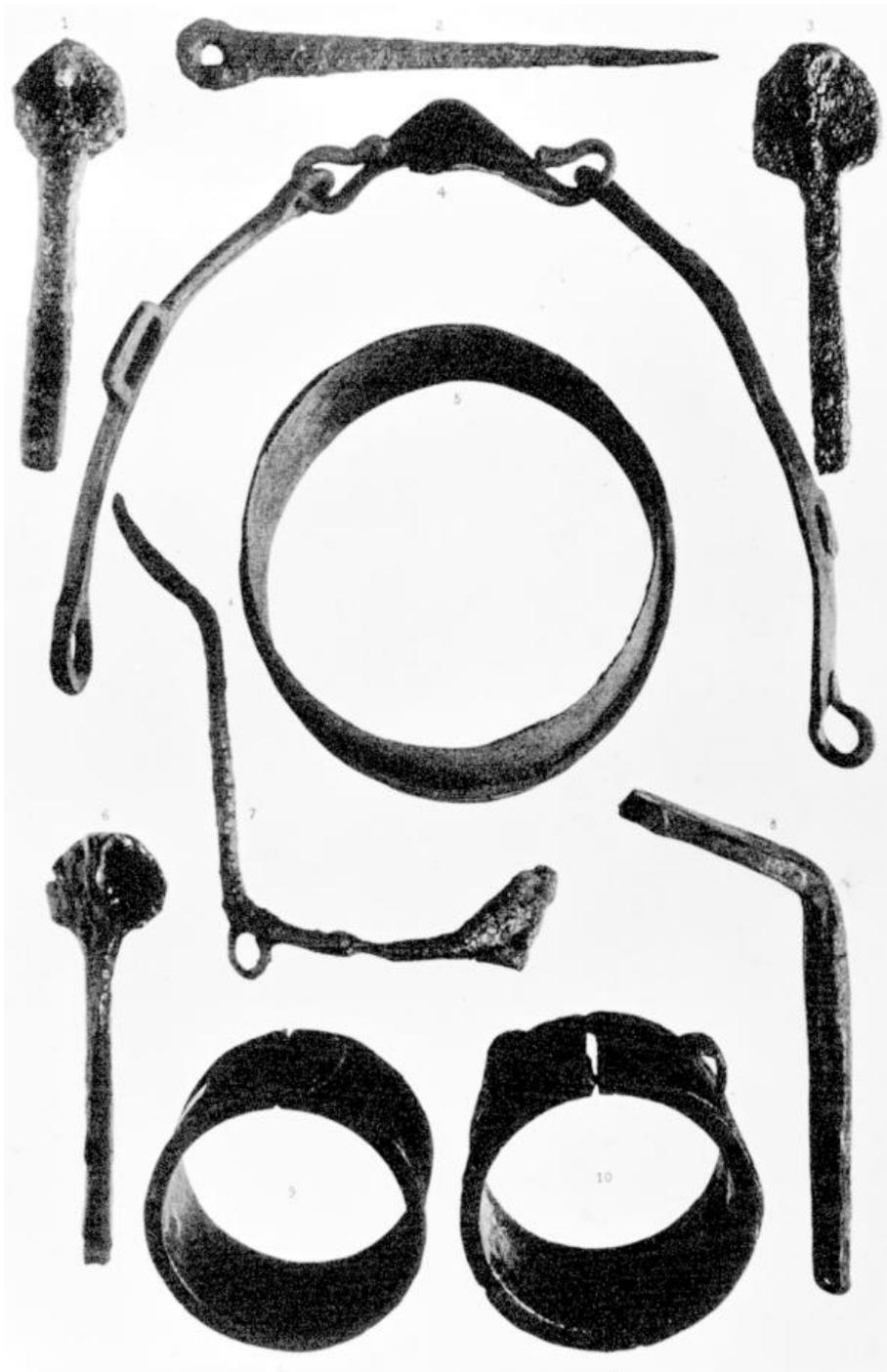
1 Sibenaler, *Guide illustré du Musée d'Arlon*.

2 Cichorius, *Die Trajanssäule*, Taf. lxxviii.

PLATE LXX. WHEEL-MOUNTINGS AND HARNESS

	PAGE
1. Linch pin. Pit I.	294
2. Pin.	
3. Linch pin.	294
4. Object, probably belonging to harness. Pit xvi.	297
5. Hub rim. Pit XVI.	293
6. Linch pin.	294
7. Fragment of iron head stall.	
8. Linch pin (?) Pit XVI.	294
9. Hub lining. Pit XVI.	293
10. Hub lining. Ditch of the early fort.	293

All the objects figured are of iron.



INCHES 0 1 2 3 4

CENTIMETRES 0 1 2 3 4 5 6 7 8 9 10

passed a cord to keep the pin in position. Such heavy pins may be seen in use to-day in country waggons on the Continent.

In modern times harness, like dress, has lost much of the colour and decoration formerly associated with it. Only in Southern Spain, in Sicily and in Northern Africa do the horse-trappings of to-day continue to display something of the richness which is illustrated on the monuments of Roman horsemen. These monuments were no doubt frequently coloured. Traces of the colour occasionally survive, though, as a rule, it has faded out of all recognition. A recently published drawing of the gravestone of Silius, a soldier of the Picentinian Ala, found at Mainz, reproduces the tints which were still fresh at the time of its discovery. In one panel, which shows the soldier leading his horse, we can see the high-peaked military saddle of yellow leather and the green saddle-cloth with red hanging streamers, while the broad red straps that form the breeching and run round the horse's breast are adorned with bright metal phalerae.<sup>1</sup>

### **Roman Horse Trappings**

Some of the horses in the monuments from Cologne, preserved in the Wallraf-Richartz Museum there, are even more richly caparisoned. On the charger of Marcus Sacrilus of the Norician Ala, for example, the fringed saddle-cloth hangs almost to the ground, the bridle is decorated with what appear to be great tufts of wool, which we may suppose to have been brightly coloured, and on the horse's poll is fixed a large circular phalera with a head in relief. The breeching and the straps round the breast bear at intervals the usual phalerae,—circular metal plates from which streamers are suspended, and between which are attached smaller crescent-shaped pieces, probably of bright metal. Sometimes a band of cloth or leather with a deep fringe is worn round the shoulder beneath the straps as in the monument of T. Flavius Bassus, also of the Norician Ala, in the same collection. The figure of this soldier on his charger is reproduced in Fig. 42. Here too there is a richly decorated martingale, from which hangs a strap terminating in a small crescent-shaped pendant—a feature which may likewise be observed on the monument of the standard bearer Flavinus at Hexham. Both at Arlon and at Neumagen the heads of the horses harnessed to the lighter vehicles are adorned with a high crest-like ornament, no doubt made of bright-coloured wool and leather. Such ornaments are still in use in the South of Europe, and something of the kind, though on a smaller scale, forms part of the bridle of the horse of Bassus.

<sup>1</sup> Lindenschmitt, 'Neuerwerbungen des Mainzer Altertumsvereins,' *Mainzer Zeitschrift*, 1908, p. 135, Taf. iii.

## Bits

At Newstead a large number of the objects of metal could be identified as harness-mountings. Of these the most easily recognisable were the bridle-bits. Two were found with the helmets in Pit XXII (Plate LXXI., Figs. 1 and 2). They are both of iron, and appear to have been originally of the same pattern. The bar, which is  $4\frac{5}{8}$  inches in length between the



FIG. 42. FIGURES FROM THE  
MONUMENT OF T. FLAVIUS BASSUS AT  
COLOGNE

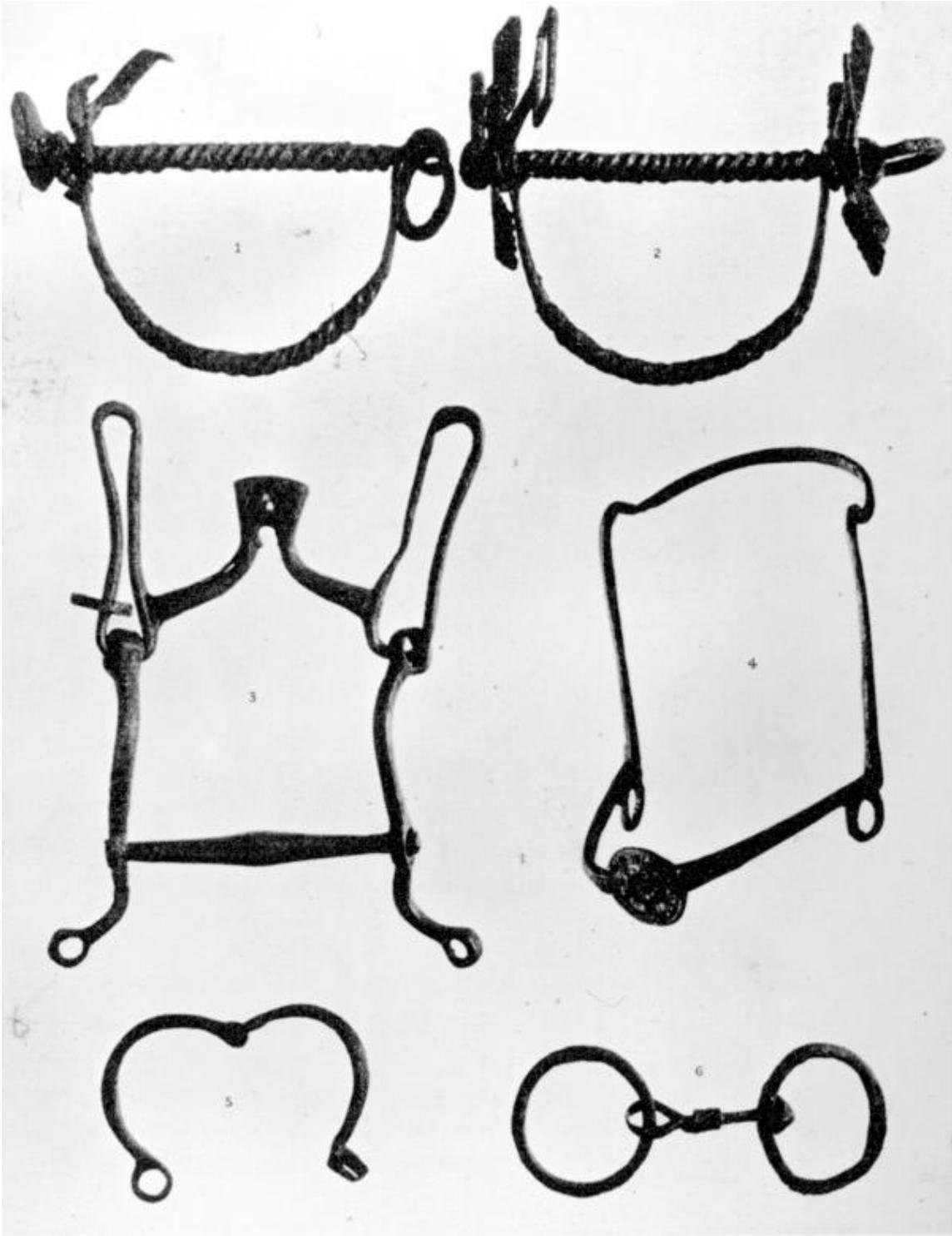
cheeks, is ridged by twisting. Joined to it at either end is a rigid curb bent almost to a semi-circle, and also twisted. Immediately beyond the points at which the curb is attached are two rectangular loops, each  $1\frac{1}{2}$  inches long, by which the bit must have been fastened to the head-stall. Beyond these, on either side, are rectangular plates, the corners of which have been hammered out, and the edges serrated, the whole somewhat in the shape of a St. Andrew's cross. Fastened to each end of the bar are the rings for attaching it to the reins. These bits probably date from the end of the first century. A Gallo-Roman specimen, somewhat similar in construction, showing a rigid curb and the same square loops for attachment to the head-stall, was found at Alesia.<sup>1</sup>

<sup>1</sup> Zschille und Forrer, *Die Pferdetrense in ihrer Formen-entwicklung*, Berlin, 1893, Taf. vii. p. 19.

PLATE LXXI. BRIDLE BITS, ETC.

	PAGE
1, 2. Bridle bits from Pit XXII.	<a href="#">296</a>
3. Bit from large inner ditch, west front.	<a href="#">297</a>
4. Mounting of headstall with enamelled disc from large inner ditch, west front.	<a href="#">297</a>
5. Hinged loop. Ditch of early fort.	<a href="#">289</a>
6. Swivel. Pit LVI.	<a href="#">289</a>

All the objects figured are of iron.



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CENTIMETRES 1 2 3 4 5 6 7 8 9 10 11 12

Another bit was found in the large inner ditch of the extended fort, where it was cleaned out on the west side, and near it lay an iron head-stall decorated with enamel. The bit (Plate LXXI., Fig. 3) is a severe one. It measures 4¼ inches between the cheeks; the bar is curved, and assumes in the centre the form of a solid tongue of metal. The mounting of the head-stall (Plate LXXI., Fig. 4) is of iron. This part of the harness was placed over the horse's nose. Sometimes it broadened out above the nostrils. In the Newstead specimen such expansion is slight, its place being taken by an enamelled medallion. Round loops served for the attachment of the bit, and the whole was fastened securely by means of straps passing through the curved bends on either side.

Head-stalls, both in bronze and in iron, have been found in various parts of the Empire, although they are probably more common on early sites. Zschille and Forrer figure a specimen in bronze found in Rome.<sup>1</sup> Head-stalls Another of iron is illustrated by Liger,<sup>2</sup> and the Museum of St. Germain-en-Laye contains a bronze example from St. Paul Trois Chateaux, Drôme. In Germany instances are to be noted as occurring at Haltern,<sup>3</sup> at Hofheim,<sup>4</sup> and at Zugmantel,<sup>5</sup> while the horse on the monument of T. Flavius Bassus at Cologne appears to be wearing a metal head-stall. In none of these cases, however, do we find the same method of decoration as is employed in the present specimen, where the centre is composed of millefiori enamel with a brass edging, recalling the familiar egg and tassel ornament. Many examples of the use of enamel in harness-mountings of the Late Celtic period have been found in Britain. But neither in its form nor in its decoration is the head-stall associated with these. Probably the method of decoration combined with the 'find-spot' may be taken as evidence that it belongs to the Antonine period.

Figure 4, Plate LXX., which came from Pit XVI, seems to have formed some portion of a set of harness. It suggests hames for a collar. But the two long pieces of metal are of unequal size—8½ inches and 9⅝ inches respectively. Again, one of them has a single projecting loop, as though for a strap, while the other, which is flatter and more solid, has two much

1 *Op. cit.* Taf. V. Fig. 7.

2 *La Ferronnerie*, vol. ii. fig. 101.

3 *Mitteilungen der Altertums-Kommission für Westfalen*, Heft ii. Taf. xxvii. Fig. 2.

4 *Das früh-römische Lager bei Hofheim*, Text Fig. 24, No. 16174.

5 *Der Obergermanisch-Raetische Limes*, Lief. 32, 'Kastell Zugmantel,' Taf. xxi. Fig. 56.

smaller perforations. This last feature can be paralleled from an object found at Hofheim.<sup>1</sup> Examples of the rings known as terrets were also met with. They were fastened on a pad, and the reins were passed through them. Plate LXXV., Fig. 12, from Pit LVIII, is of iron with some traces of bronze or brass plating. It is a Roman type, similar to specimens from Novaesium and the Saalburg. It is interesting to compare it with Fig. 2 of the same plate, a bronze terret with projecting flanges on the ring, which is a characteristic British variety. Fig. 4 is an object of bronze which was taken from Pit LVIII. It also seems to belong to harness. It is 4 inches long, and curved with a loop at one end, while at the other end is a tang for fastening it into a socket. When the whole was complete, the bronze portion must have projected to the side like an animal's horn. Possibly it was one of a pair fixed on the top of a pad and intended for the suspension of hanging discs of metal. One such disc, leaf-shaped and of bright brass, (Plate LXXV., Fig. 10) was found in the pit along with it. It is 4½ inches long, and has a button-like termination of solid metal. The metal in the body of the disc is quite thin, and the stud upon the back shows that it was probably backed with leather.

The smaller metal objects employed in the decoration of harness can be divided into three classes—the circular phalerae, the lighter pendants hanging from these, and the loops by which the straps for attachment were fastened. The most remarkable set of such harness-mountings was found in washing out the silt at the bottom of Pit LV. These are grouped together in Plate LXXII. In the centre is a phalera, and on either side of it are two hanging ornaments and other mountings for strap ends. Then there are two decorated plates which, from their association, probably belong to harness. All of these are of brass. Here and there, however, silver-plating and copper have been employed to heighten the decorative effect.

### Phalerae

The phalera measures 3⅝ inches in diameter. Unlike the light discs which bear the name of Domitius Atticus, it is strongly put together. The central boss is of silver, bordered by a rope-moulding of bright brass, which in its turn is surrounded by a moulding plated with silver, while the other band and the small circular projections on the rim have been overlaid with copper, bearing an embossed pattern. A flat circular ring is attached to the back of the phalera shown in Fig. 43. From this project

1 Ritterling, *Das frühromische Lager bei Hofheim* (Nachtrag), Abb. 13, 17666.

PLATE LXXII. HARNESS MOUNTINGS FROM PIT LV

	PAGE
1, 2, 5, 6, 7, 11, 12, 13, 15 and 16 are loops employed to connect a leather strap with a metal ring.	298, 301
8 and 10. Terminals for attaching to straps.	298, 301
3. Small bars with tangs for attaching them to leather.	
4 and 14. Decorative plates, probably for harness.	298
9. Phalera for harness.	298

All the objects are of brass. Nos. 4 and 9 show decoration with copper. On several of the pieces there are remains of silver plating.



three strong loops of brass, which are flattened to prevent their chafing the horse's flank. Two of these loops would be attached to the breeching, while from the third would depend a floating streamer or some hanging ornament of metal. Unlike the majority of such finds, this phalera has suffered but little, and it thus serves to give a true impression of the richness of Roman harness-mountings. Many of them must have been lavishly decorated. On the monument of Albanus of the Asturian Ala at Chalons-sur-Saône, for instance, one of the phalerae bears an embossed figure of an armed man on horse-back, another that of an eagle, a third a head, perhaps representing Medusa. Altogether there would appear to have been five of these large discs on the harness of Albanus, and this was probably the usual number, three

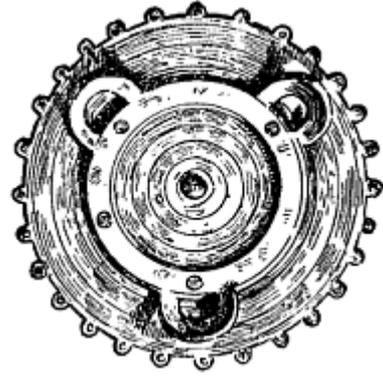


FIG. 43. PHALERA FROM PIT LV BACK VIEW

being placed in front of the saddle and two on the quarters behind. Two circular discs of bronze, illustrated in



FIG. 44. PHALERA FROM XANTEN

Fig. 44 reproduces a highly decorated phalera with its pendant leaf-shaped ornament still attached to it. This phalera is of bronze, overlaid with silver. It forms one of a set said to have been found near Xanten, and is now in the British Museum. It is believed to date from the early part of the first century. On the back, in the upper segment of the circle, are two strong rings, slightly bent towards the edge, while the lower segment contains two

raised plates, between which is fixed the rigid stem of the hanging ornament. The pendant is evidently a conventional representation of foliage; a central pointed shoot is flanked on either side by leaves, and the leaves have their points turned back as though hardly yet expanded. The object, slightly varied, and sometimes assuming a phallic form, is common, in different sizes, on the Rhine, perhaps more especially on the earlier sites, such as Novaesium and Wiesbaden. It also occurs in England; the British Museum possesses specimens still attached to phalerae from Reeth, in North Yorkshire.

At Newstead examples of similar pendants were noted comparatively early among surface finds made within the fort (Plate LXXIV., Figs. 5 and 7). But it was only towards the end of the excavations that what appears to be a complete set was taken from Pit LXXVIII, which, from the pottery it contained, was undoubtedly of early date. These, though somewhat smaller in size, very closely resemble the pendants on the Xanten phalerae. They are three in number, and are made of bronze plated with silver (Plate LXXIII., Figs. 2, 3 and 4). On the broad leaf-like surface is tooled a delicate design of leaf and tendril, which was probably once filled in with niello, while the berries, corresponding to the grapes in the Xanten design, have been reproduced in small points of yellow metal. One of the pieces is slightly larger than the others, and was doubtless intended to be placed in the middle of the group. It differs from the rest in the treatment of its central leaf. On the back it has the same solid stem as was noticed in connection with the Xanten phalera. Along with this find we may conveniently notice two other objects from the same pit. One of these is a small circular disc (Fig. 1), also of bronze plated with silver, showing traces of niello decoration, and having a loop on the back for a strap to pass through. The other (Fig. 5), of the same material, forms an eye to be affixed to the end of a strap through which a T-shaped hook would be attached.

The Reeth horse-trappings alluded to above enable us to identify as portions of harness a number of examples of discs of another form. The best specimen (Plate LXXIV., Fig. 2) came from Pit LX. It is of bronze. The central portion is concave, and is decorated with six incised rays. In the centre is a small hole, through which passes a stud. On the back are two metal loops, about  $\frac{7}{8}$  of an inch in width, joined together at one end by a third and much smaller loop. These discs were evidently fastened upon a strap, the stud in the centre passing through the leather, while from the small loop, placed at right angles to the larger ones, the hanging ornament was suspended

PLATE LXXIII. HARNESS MOUNTINGS, TERRA COTTA HORSE

	PAGE
A. 1. Circular stud. Pit LXXVIII.	300
2, 3 and 4. Pendant ornaments for attaching to phalerae. Pit LXXVIII.	300
5. Metal terminal, with eye for attachment to a T-shaped hook. Pit LXXVIII.	300
6. Spoon. Pit LXXXV.	338
7. Pin. Pit LXXVIII.	337
8. Needle. Pit LXXIII.	337
All the objects figured above are of bronze or brass. Nos. 1 to 5 are plated with silver, and show remains of niello decoration.	
B. Terra cotta group, originally of two horses; one has been destroyed. Pit XCII.	305



as in the Reeth find. Other specimens of these smaller discs may be seen in Plate LXXIV., Figs. 1, 3, 8 and 10.

No doubt the hanging ornaments attached to phalerae varied considerably in shape. On the horse of Bassus (Fig. 42, page 296) long floating streamers take the place of the more rigid leaf-ornaments we have been describing, and for these also there were probably employed metal terminals much like the two figured in Plate LXXII., Figs. 8 and 10, and some of those shown in Plate LXXVI., Figs. 4 to 10, 12, 13, 15, 16, though they may equally well have served for the ends of girdles. In the remarkable finds from the mosses of Schleswig, especially that from Thorsbjerg, we have interesting examples of the richness of early harness. Probably these contain objects that are not purely Roman, and they are perhaps a little later in date than the earliest occupation of Newstead. At the same time the Roman influence is strongly marked. It is instructive to note that the Thorsbjerg find included a number of hanging terminals which are identified as belonging to harness, and which clearly belong to the same class as those of which we have been speaking (Plate LXXII. and Plate LXXVI.).<sup>1</sup>

Terminals of the same pattern as those in Plate LXXII. were found at Haltern.<sup>2</sup> In these, too, the surface of the upper portion of the mounting was plated with silver, a method of decoration less common in the Antonine period. Of the examples brought together in Plate LXXVI., Fig. 8 from the Principia and Fig. 7 from the Praetentura are very similar. The longer is plated with some white metal, and inlaid with a design in niello. Fig. 9, which is of bronze like the preceding pieces, is leaf-shaped. In the case of Fig. 6 a portion of the leather to which the mounting was originally attached still survives. It is, of course, possible that some of the metal endings may have come from the long fringed portion of military girdles. Such are shown hanging down in front in many of the monuments.

### **Strap Mountings**

The Thorsbjerg find, which has already proved helpful, further illustrates the use of such loops as we find in Plate LXXII. These are made of comparatively thin metal, except for the actual loops, which are stronger. It is evident that they were fixed to the ends of straps, for in some of them the rivets are still in position. A similar article was employed at Thorsbjerg as part of a chain-bridle, its purpose being to serve as the joint

1 Engelhardt, *Denmark in the Early Iron Age*, plate 15, figs. 38 to 48.

2 *Mitteilungen der Altertums-Kommission für Westfalen*, Heft iii. Taf. xv. 4.

between the chain and the strap.<sup>1</sup> A loop of almost the same pattern as that from Thorsbjerg was also found attached to a chain, probably part of a bridle, at Weissenburg.<sup>2</sup> It is, of course, possible that some loops of this type may have been mountings for sword belts. Thus, Plate LXXIV., Fig. 6, presents an example of a circular object, with a centre hollow but for its projecting boss, and having rings to which four such loops have been attached. It was found in the roadway at the West Gate. In the Middle Ages, when swords were slung across the back, such an article might no doubt have served as part of a sword-belt. But Roman swords, as we see them on the monuments, usually hang straight at the side. It is probable therefore that this is really part of a bridle.

### **Late Celtic Harness**

The majority of the objects grouped together in Plate LXXV. are distinguished by features which associate them with Late Celtic art. One of the most characteristic of them is the terret ring of bronze (Fig. 2). It was discovered beneath the level of the later Barrack Blocks at the south-east angle of the Praetentura, and at least two other specimens were found within the fort, both much corroded. They are a common feature in Late Celtic finds,<sup>3</sup> such as the Stanwick hoard from Yorkshire. Sometimes, as in the well-known set from Polden Hill, Somersetshire, they have much more exaggerated projections, and are inlaid with spots of enamel.<sup>4</sup> Fig. 6 is probably a portion of one of the terminal rings of a bronze bit. The oval ornament attached to it is just what we find on the bit from Rise, near Hull, except that there the centre boss is decorated with enamel.<sup>5</sup>

Figs. 1, 3, 7, 8 and 9 clearly belong to the same family. In all of them we have the petal-like design that occurs in the enamelled ornaments of the bridle-bit from Rise. Figs. 1 and 3 are each furnished with double loops at the back for a strap to pass through. Fig. 9 has a single loop, also at the back. Figs. 7 and 8 probably served as attachments, the petal-shaped head being employed to prevent them from slipping out of a leather strap. That all five are to be classed with Figs. 2 and 6 as harness-mountings seems evident, seeing that we can point to the occurrence of similar articles found with horse-furniture elsewhere. In Scotland analogies are to be noted in the

1 Engelhardt, *Denmark in the Early Iron Age*, plate 14, figs. 21 and 116.

2 *Der Obergermanisch-Raetische Limes*, Lief. 26, 'Kastell Weissenburg,' Taf vi. Fig. 19.

3 *British Museum Guide to the Antiquities of the Early Iron Age*, pp. 131 ff.

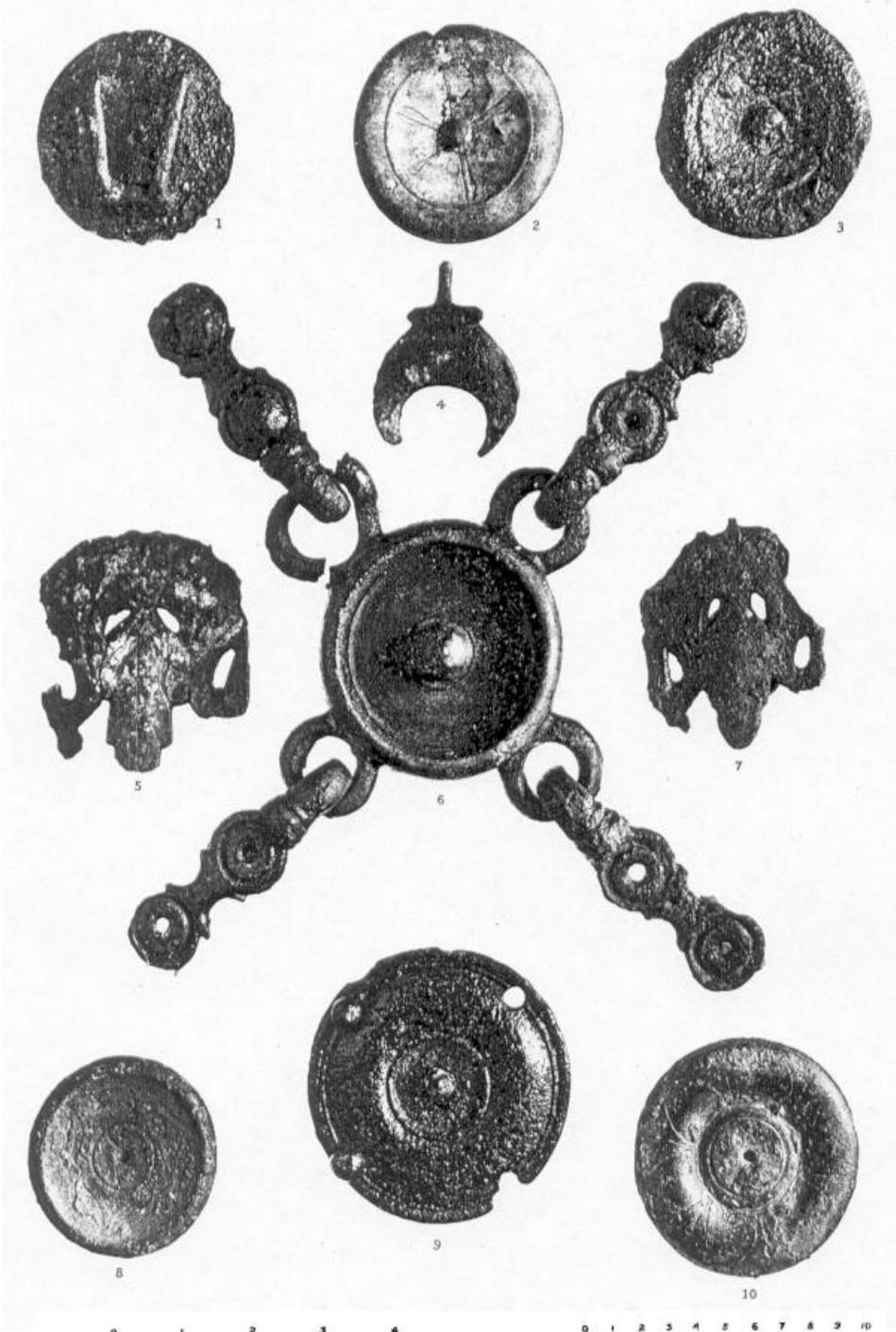
4 Kemble, *Horae Ferales*, plate xx. fig. 1.

5 *British Museum Guide to the Antiquities of the Early Iron Age*, plate v. fig. 4.

PLATE LXXIV. HARNESS MOUNTINGS.

	PAGE
1. Harness mounting, back view. Praetentura.	301
2. Harness mounting. Pit LX.	300
3. Harness mounting.	301
4. Lunette ornament for suspension. Block XIII.	
5. Hanging ornament for harness, bronze, with traces of white metal.	300
6. Harness mountings. Roadway outside west gate.	302
7. Hanging ornament for harness.	300
8. Harness mounting. Block XIII.	301
9. Circular mounting.	
10. Harness mounting.	301

All the objects figured are of bronze.



INCHES 0 1 2 3 4

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PLATE LXXV. HARNESS MOUNTINGS, LATE CELTIC TYPES

	PAGE
1. Harness mounting of bronze. Barracks, Praetentura.	302
2. Terret ring, bronze. Barracks, Praetentura.	302
3. Harness mounting, bronze. Barracks, Praetentura.	302
4. Harness mounting(?). Pit LVIII.	298
5. Embossed strip of brass. Pit LVIII.	303
6. Portion of a bit, bronze. Retentura.	302
7, 8. Loops of bronze. Barracks, Praetentura.	302
9. Mounting of bronze. Barracks, Praetentura.	302
10. Hanging ornament for harness of brass. Pit LVIII.	298
11. Decorated mounting for harness, bronze. Pit LIX.	303
12. Terret ring of bronze. Pit LVIII.	298



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hoard of bridle-bits, terret-rings, and other objects undoubtedly belonging to harness, discovered in a moss at Middlebie in Annandale in 1737, and now in the National Museum in Edinburgh. Another find, which resembles the last in many particulars, is that of Stanwick already cited. In both there were decorated bridle-bits of the peculiar Celtic character that appeared at Rise, one ring being more highly ornamented than the other,—a want of uniformity which has been interpreted as indicating that the bits were designed for use by a charioteer; in driving a pair of horses, the more decorative ring would be worn on the outside, and fully exposed to view. Further, in both finds the bits are associated with the same terret-rings and trappings. At Stanwick, however, and perhaps in a measure also at Middlebie, the objects analogous to Figs. 1 and 3 are of finer and lighter workmanship. Although Fig. 11 has been included in Plate LXXV. as possibly a Celtic product, its origin is less obvious than that of the other pieces beside it. It was found in Pit LIX in association with early pottery. It is of bronze, and was evidently employed in much the same way as the smaller petal-shaped loops (Figs. 7 and 8). A strong loop is attached to the centre of the back, as though for the purpose of insertion in a strap, the decorated triangular portion serving to prevent the whole from being displaced. On the upper surface are six settings, which were probably filled with coral or enamel, though no trace of anything of the sort remains.

Along with these pieces of harness-mounting, we have grouped an object which is no less surely a product of Celtic Art (Fig. 5). This is a plate of thin brass  $4\frac{1}{2}$  inches by  $1\frac{1}{2}$  inches with embossed ornament. When found, it was doubled up. It is furnished with holes through which it was probably fastened by studs to some wooden surface. The design is divided into two panels. In the centre of each is a rosette closely resembling those which decorate the Balmaclellan mirror.<sup>1</sup> The rosettes are enclosed by curved stems terminating in a point such as one might see in a branch cut diagonally, with a piece of torn bark adhering to it. Midway in each of the curves is a thickening and a break, as though the stem had been snapped in bending. This is the feature which, slightly more developed, becomes the characteristic projections of the terret-ring. The whole treatment makes it clear that the design had its origin in the study of plant forms. The difference that is left between the two panels is characteristic of early work; the modern craftsman would have balanced them equally. To judge from the pottery with which

1 *Proceedings of the Society of Antiquaries of Scotland*, vol vii. p. 349.

it was associated, and the position of the pit (LVIII) in which it was found, this piece of brass must belong to the early period.

When we compare the little group in Plate LXXV. with finds from purely British sites such as the Stanwick hoard, we see that the designs have become more solid and heavy, and that the craftsmen have lost something of their inventiveness. Between the art which produced these Celtic horse-trappings and that which displays itself in the buckles illustrated on Plate LXXVI. (Figs. 1, 2, 3, 17 and 18), there is no doubt a relationship. The two must have had a common origin. But, while the horse-trappings have features which are probably peculiar to Britain, such scroll-work as is found in Plate LXXVI., Fig. 2—the Trompetenmuster of German archaeologists—is by no means uncommon in the Limes forts, where it occurs both on brooches and on belt mountings. Good examples may be seen at the Saalburg and also among the smaller trinkets from Zugmantel.<sup>1</sup> At Zugmantel, too, we have buckles exactly like Figs. 1 and 3. At Newstead probably none of these buckles are earlier than the Antonine period.

The Stanwick hoard contains a piece of harness-mounting which evidently served the same purpose as the Newstead example shown in Plate LXXV., Fig. 1. It consists of four parts—two rings with the characteristic expansions and two rectangular pieces. In Fig. 1 the square ends are preserved, but the rings with their projecting flanges have developed into solid petals with raised centres. The bridle-bit from Rise represents an intermediate stage in the process of evolution. Here we have the petal-shaped motive employed as a decoration of the terminal rings. But each petal is composed of two parts. To begin with, there is a ring which is expanded to a point at one side, a raised line testifying to the tradition of the meeting of the two stem-like ends just as in the ornament of Plate LXXV., Fig. 6. Again, a circular filling, decorated with enamel, has been introduced. Between this filling and the expanded side of the ring there remains an open space, showing how the enamelled filling was inserted into the earlier design. The Stanwick hoard was found among extensive earthworks, enclosing nearly 1000 acres. Near it were discovered large iron hoops that were doubtless the tyres of chariot wheels. But no Roman coins or pottery appear to have been turned up within the earthworks, though these lie at no great distance from the great Roman road called Leeming Lane. As far as is known, the Middlebie find was not associated with Roman relics either. Probably,

<sup>1</sup> *Der Obergermanisch-Raetische Limes*, Lief. 32, 'Kastell Zugmantel,' Taf. x. Figs. 20, 21, 24, 25.

PLATE LXXVI. TERMINALS FOR STRAPS AND BUCKLES

	PAGE
1. Buckle of bronze. Upper levels, Pit II.	304
2. Buckle of bronze. Block XVI.	304
3. Buckle of bronze.	304
4. Terminal for a strap, bronze.	301
5. Terminal for a strap, bronze. Retentura.	301
6. Terminal for a strap, bronze. Retentura.	301
7. Terminal for a strap, bronze, with white metal plating and decoration in niello. Courtyard, Principia.	301
8. Terminal for a strap, bronze. Courtyard, Principia.	301
9. Terminal for a strap, bronze. Block XIII.	301
10. Terminal for a strap, bronze, showing leather. Barracks, Praetentura.	301
11. Portion of a buckle, brass. Pit LXV.	
12. Terminal for a strap, bronze.	301
13. Terminal for a strap, bronze.	301
14. Terminal for a strap, bronze.	
15. Terminal for a strap, bronze. Barracks.	301
16. Terminal for a strap.	301
17. Buckle of bronze. Block II.	304
18. Buckle of bronze. Praetentura.	304
19. Mounting, bronze, showing traces of plating with white metal. Courtyard, Principia.	
20. Belt mounting, bronze. Block XII.	
21. Bronze loop with head of a griffin; Principia.	



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PLATE LXXVII. PHALERAE AND MISCELLANEOUS BRONZE OBJECTS

	PAGE
1. Bronze rod with phallic terminal, perhaps part of a balance.	150
2 and 3. Bronze amulets or perhaps buttons. Riverbank field.	187
4. Bronze loop of a sword sheath. Block XIV.	
5. Bronze loop.	
6. Bronze object of uncertain use, perhaps for the end of a sheath.	
7. Bronze mounting Porta Praetoria.	
8. Bronze mounting with settings of blue enamel.	
9. Hollow object of bronze.	
10. Bronze mounting.	
11. Phalera of bronze.	299
12. Hinge of brass. Pit LXV.	
13. Phalera of bronze. Barracks, Block II.	299
14. Bronze ornament with loop for a strap.	
15. Brooch of bronze. Praetentura.	331
16. Button of horn. Pit LXV.	150



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therefore, both hoards were deposited before the Roman advance upon Caledonia. Have we then here at Newstead in these horse-trappings, an indication similar to that already noted in the sword-guards, that by the second century—perhaps under the influence of contact with Roman civilisation—the characteristic forms of Late Celtic metal work were beginning to lose something of their lightness and delicacy?

### **A Terra Cotta**

The solitary example of a Roman Terra Cotta which came to light in the course of the excavations may be included to complete this chapter. It consists of a figure of a horse, a stout cob-like animal, standing  $6\frac{3}{4}$  inches high, moulded in fine white terra cotta (Plate LXXIII., Fig. 9). It was found in Pit XCII. Originally a second horse stood beside it, but all that remains of this are the legs and tail. The two horses were evidently joined together by a yoke, the end of which may be seen resting on the neck of the figure that has survived. The stand which forms a base is complete, and there is no trace of the attachment of any vehicle. The group doubtless served as a toy or ornament. In the Museums of France and Germany we may find many little figures moulded in the same fine white terra cotta. From this material were fashioned the figures of the gods for the household shrine and the toys of the children. In France it is believed that many of these were made near Vichy. In Germany at least one centre of such manufacture is known. Many examples came from Cologne, and these bear the names of their makers, *SERVANDVS* of the *Colonia Claudia Augusta Agrippinensium*, who sold his wares at the *FORVM HORDIARVM*, or *LVCIVS*, who worked at the *CANTVNAS NOVAS*.<sup>1</sup> Unfortunately the maker of our Newstead group has left upon it no trace by which we can identify him.

1 Lehner, 'Zur Kenntnis der römischen Terrakottafabriken in Köln,' *Bonner Jahrbücher*, Heft 110, S. 188 ff.