

S O U T H E R N B R I T I S H D E C O R A T E D  
B R O N Z E S O F T H E L A T E  
P R E - R O M A N I R O N A G E

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by

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## Abstract

This thesis is based on a study of more than 500 bronzes, described in a Catalogue, and mostly illustrated, of the late pre-Roman Iron Age from England and Wales south of Lancashire and Yorkshire. The classes of objects studied comprise: presumed and probable vehicle-fittings and horse-harness, weaponry, mirrors, vessels, 'spoons', weighing-devices, and miscellaneous other pieces including sheet mounts and ornamental studs. New classifications are proposed, and the presumed functions of the bronzes are discussed. An outline assessment is made of the techniques of manufacture, excluding data on chemical composition and physical structure. The most important technical innovations are indicated. The principles underlying the dating of the bronzes are examined, and it is concluded that previous chronologies have been over-precise, and that two phases may be discerned. Distribution-patterns are discussed; two major style-zones, a western and an eastern, are distinguished, and shown to have originated before the birth of Christ. Workshops are shown to have been located in most parts of southern Britain, C. Fox's model of workshop-distribution being rejected. Aspects of smith-organisation are considered, and directions for further research are suggested.

## Preface

The research project, of which this thesis is the outcome, has been carried out since 1966 under the guidance of Dr. F.R. Hodson at the University of London Institute of Archaeology. To Dr Hodson and other members of the staff of this Institute, in particular Mr. H.W.M. Hodges, I am grateful for much helpful advice; I have also benefited greatly from discussions with fellow students at the Institute. I am much indebted to friends and colleagues elsewhere for their help in matters both directly and indirectly concerned with the pursuit of my research, and to all those, both in Britain and abroad, in whose care are entrusted the objects that are the subject of this study, for enabling me to study them at first hand.

I must thank too the Department of Education and Science for financing my research from 1967 to 1969. Moreover, I owe an enormous debt of gratitude to my parents for their generosity, without which this project might never have been completed. I thank my wife for her encouragement and help, particularly in proof-reading the text.

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1. Introduction

1.1. Origins of and reasons for the study

The seeds of this thesis were sown in 1965-6, when, as part of the requirements for the B.A. Honours degree in Archaeology at the University College of South Wales and Monmouthshire, Cardiff, I made a study of the mid-first century A.D. hoard of metal and other objects from Santon, Norfolk. In that study I set out to describe, discuss and illustrate the contents of the hoard; it included objects of both native British late pre-Roman Iron Age and Roman types. However, in attempting to place the former in their proper context, it became clear that a far more reaching study was required than could be attempted then.

Several circumstances demanded a thorough re-appraisal of British late pre-Roman Iron Age bronzes:

1. Although much of the metalwork had been published in one form or another since the eighteenth century, many objects had never been published at all. Moreover, of the former category a large proportion had been inadequately studied.

2. Despite the publication of lists of certain classes of objects (cf. Ward Perkins 1939; Piggott 1950), many of them were either inaccurate or incomplete at the time of publication, and most of them had been rendered out of date by subsequent discoveries. Furthermore, no-one had yet attempted to compile a comprehensive corpus, with detailed descriptions and illustrations of late pre-Roman Iron Age bronzes,

despite a plea made fifteen years earlier (C. Fox 1951: 187).

3. Most of the attention in describing and discussing objects had hitherto been directed towards details of design, and very little towards techniques of manufacture.

4. The currently-accepted classifications were in many cases unsatisfactory, needing revision or total replacement, since they were either ill-defined, or too general, or had<sup>been</sup> rendered out of date by subsequent discoveries.

5. Chronologies left much to be desired. In common with most of the material culture of the British pre-Roman Iron Age, much of the accepted dating was over-precise and founded too much on unproveable assumptions, a point largely forgotten or ignored, as both Jacobsthal (1944: 206-7) and Hodson (1964a: 135-41) had observed. Since the dating of the metal-work is ultimately based upon continental chronology, and in view of the recent critical studies of the latter by Dehn and Frey (1962), Hachmann (1961: 244-55), Hodson (1964a: 123-35), and de Navarro (1960: 114-8), it was apparent that there was need of a thorough revision of the dating of British late pre-Roman Iron Age metalwork.

6. Far more thought was needed about the presumptive functions of the metal-work.

7. The conceptual framework of much previous work was vague and imprecise and had never been properly thought out. Many rather ill-defined concepts had been virtually codified into laws without ever

being seriously questioned, for example, the alleged predominance of a (south-) western or Dobunnic school of smiths, first adumbrated by Leeds (1933a: 28-36) and still accepted thirty years later (e.g. MacGregor 1962: 34-5), despite the criticism of Ward Perkins (1939: 188-9), and the acceptance of the proposition that Anglesey was "not a creative centre of art or craftsmanship" (C. Fox 1947a: 60), a concept due largely to C. Fox's contention (1943: 86-9) that after the Early Bronze Age the 'Highland Zone' of Britain was a cultural backwater; nevertheless, the latter concept had recently been challenged by Alcock (1963b: 5-8) and Savory (1964a: 26, 30).

It was in the context of these seven circumstances that I commenced the present study.

### 1.2. Scope of the study

The present thesis is concerned with certain classes of bronzes of the southern British pre-Roman Iron Age. The bronzes, described and listed in the Catalogue (in Volume II) and illustrated in Volume III, may be roughly grouped as follows: horse-harness, vehicle-fittings, and other objects often considered to have been used with horses and vehicles, weaponry, mirrors, vessels, ornamental studs and mounts, 'spoons', weighing-devices, and a few other miscellaneous pieces. By southern British I mean Wales and England south of Lancashire and Yorkshire; since the bronzes of the area to the north had recently been considered by Simpson (1966) and Stead (1965a), and since to a large extent there appear to have been pronounced differences in the pre-Roman Iron Age

between northern and southern Britain, as defined above, I decided that this would form a convenient geographical limitation to the scope of the study. The definition of the epithet 'Late Pre-Roman Iron Age' is by no means so easy. The term is roughly equivalent to what Hodson (1964a: 140; 1964b: 100) has successively designated 'Later Pre-Roman Iron Age' and 'Late pre-Roman Iron Age'. However, whilst both Hodson's and my own terminology coincide in ending in the middle years of the first century A.D., the beginning of Hodson's 'Late pre-Roman Iron Age' phase was correlated with the introduction of continental la Tène III types, such as the 'Nauheim' brooch. Since, as is demonstrated below (chapter 30), there does not appear to be any distinct 'horizon' corresponding with the introduction of continental la Tène III types and influences in design, as far as the bronzes that are the subject of this thesis are concerned, it seems to me that the appearance of Late la Tène types and influences is only of chronological importance and significance. Moreover, I can find no strong evidence in other aspects of the material culture of the southern British pre-Roman Iron Age that significant changes can be directly correlated with the introduction of la Tène III types. As I shall indicate below (chapter 30.3.6), the beginnings of the complex of bronzes that are the subject of this thesis appear to begin, in continental terms, in Middle la Tène times, that is by the second century B.C., although much of the development does appear to be contemporary with continental Late la Tène; I have termed the whole of this complex 'Late pre-Roman Iron Age'. When this epithet

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is applied to other kinds of material culture, it is used in a very similar sense to that in which it has been defined by Alcock (1969: 33) for the material from the recent excavations at South Cadbury Castle, Somerset; I also use the term to describe such ceramic groups as those listed by Hodson (1964a: 140) as comprising his 'Later Pre-Roman Iron Age'.

I have attempted to complete lists of objects of the classes of bronzes noted above; whether or not they are complete, only time will tell. No objects found after 1970 are included in the Catalogue, though one or two subsequent discoveries have been mentioned in the main text.

The arrangement of the discussion is as follows. Chapters 2 to 28 deal with the classification and functions of the bronzes, as well as with continental connections and origins. It should be emphasised at this stage that the classification is 'intuitive', and that numerical methods have not been used in this task; the application of the latter did not seem appropriate or even necessary, particularly in view of the generally small number of objects in each functional class. In Chapter 29 an outline assessment is made of the techniques of manufacture of the bronzes, while Chapter 30 is devoted to chronology. Distribution - patterns are considered in Chapter 31, workshops and the organisation of smiths in Chapter 32.

I have deliberately refrained from attempting a detailed stylistic analysis of the ornamentation of the bronzes, partly since so many previous studies have been devoted to this, and since a major re-assessment of British pre-Roman art is shortly to be published (Jacobsthal and Jope, forthcoming).

## 2. Terrets (Nos 1-105)

### 2.1. Introduction

The objects referred to as "terrets" form the largest class of objects to be considered in this study. Well over one hundred are known from southern Britain, and many more have been found in northern England and Scotland (MacGregor 1962; Simpson 1966: 64-98; Stead 1965a: 42-4). Their evident popularity in later pre-Roman Iron Age Britain stands in marked contrast to their paucity in Ireland, where the only known terret was probably an import from Britain (Jope 1950: 59, Fig. 1.3), and to their infrequency also on the Continent: three terrets are illustrated by Jacobsthal (1944: Pls 110-2), whilst others have recently been discussed by Joachim (1969: 107-9) and Menke (1968). However, their relative rarity in Ireland and on the Continent may be illusory, since the French Early La Tène cart-burials contained simple rings that, to judge by their positions, were clearly used as terrets (Stead 1965a: 43-4). Nevertheless, the diversity of forms in Britain is an insular peculiarity; moreover, it is interesting that the British terrets show hardly any sign of continental influence in their several designs.

In this chapter, I shall consider first the forms of the terrets and propose a new classification for the southern British examples. I shall then consider their locations on the vehicle and the possible means of attachment.

### 2.2. Classification

I have distinguished nine major groups of southern British terrets. However, I consider Nos 95-9 sufficiently distinct from the others to be 'unclassifiable'; they are therefore discussed separately at the end of this section. This classification supersedes those of Leeds (1933a: 118-26) and Simpson (1966: 64-98), both of which are insufficiently specific for the present discussion.

#### 2.2.1. Group I: Simple forms. (Nos 1-19).

At least twenty-three terrets, all but one of bronze, from southern Britain

are devoid of, or have but very simple, ornament (Map 1 ).

Similar terrets have also been found in the north (Stead 1965a: 42, Fig. 24.1; Simpson 1966: 67-70, 119-20, nos 40-1, 43-5, 47-51, 53). Stead (1965a: 42-3) has noted that in some of the Yorkshire cart-burials plain rings appear to have been used as terrets. Many of the southern British examples consist of no more than the basic three elements, that is, loop, stops, and attachment bar. However, although there is little standardisation in form, it does not seem to be possible at present to distinguish sub-groups into which they can all be sorted. Occasionally, fairly close resemblances may be seen between individual specimens: for example, Nos 6 and 18, from Glastonbury and South Cadbury respectively, each have rings of even thickness all the way round and similar overall shapes, while Nos 15-17, from the Polden Hill hoard, are sufficiently similar to each other and distinct from other terrets to suggest another variant form. Again, the two Lincolnshire terrets, Nos 9 and 14, may represent another variant, and Nos 10-11, from Llyn Cerrig Bach, yet another. It is interesting to note that these four variant forms are very localised in their respective distributions, which suggests that they were the products of different local workshops each with its own particular design of terret.

#### 2.2.2. Group II: Thick-ringed terrets (Nos 20-26)

Eight terrets have markedly thick loops of even thickness right the way round (Map 2 ). Amongst them a sub-group may be distinguished -- those with curved-sided triangular panels enclosing ornamental motifs in low relief.

The main series consists of five examples (Nos 20-5), of which two, (Nos 20 and 22), are completely of bronze; the other three are of iron encased, except for the attachment bar, in cast bronze (Nos 21, 23-4). Nos 20 and 23-4 each have spindly low relief ornament that is related to the ornament on the Breiddin ring (No. 484) and

the Ulceby-Snettisham style. No. 22 is bevelled on each face, a feature that is only elsewhere seen on a group I terret from Hod Hill (No. 7); in view of this, it is interesting to note that both of them have a crimped rib set in a groove around the outer edge.

None of the main series has been found in a closely datable context, but the occurrence of the type at Meare and in the Llyn Cerrig Bach deposit at least suggests a date within the late pre-Roman Iron Age. The sub-type is represented by three examples: two from southern Britain (Nos 25-6), and one from Bishop Wilton, East Riding (Simpson 1966: No. 42). The two southern examples are further linked by a band of lanceolate beads arranged in zig-zag fashion around the outer edge. The relief ornament on all three is reminiscent of certain motifs in the Ulceby-Snettisham style: for example, the dot rosettes on No. 26 and on the terret from Bishop Wilton are paralleled on the three-link bits from Ringstead (No. 159) and Ulceby (No. 161), and the arrangement of lanceolate beads on the central panel of No. 25 is reminiscent of the lanceolate beads on many objects of the style, e.g. the Llyn Cerrig Bach roundel (No. 324). Unfortunately, the context of none of these three terrets is known.

### 2.2.3. Group III: Ribbed terrets (Nos. 27-30)

Four examples of this type are known: from Barbury Castle, Ham Hill, Hod Hill, and Hunsbury (Map 3). Each is made of both bronze and iron; the iron is bared for the attachment bar, while the loop is either of solid bronze cast onto the ends of the attachment bar or of bronze-sheathed iron. In all cases the loop is ribbed like a caterpillar.

Since all of these terrets were chance finds with no recorded associations, their date cannot be established with precision. It is possible that their design is based on the ribbed bracelets found for example at Arras (Stead 1965a: 51-3, Figs 28-9); but the

character of the ribbing is different, for only on the terrets is the inner as well as the outer edge ribbed.

#### 2.2.4. Group IV: Multi-knobbed terrets (Nos 31-4)

Five terrets have a series of projecting knobs evenly spaced around the outer edge (Map 3). Only one, from Hunsbury (No. 34), is completely of bronze, the others having bronze loops cast onto the ends of iron attachment bars. It is probable that the three from Hagbourne Hill (Nos 31-2) belong to the same set. This kind of terret is similar to certain knobbed bronze bracelets found, for example, in Yorkshire (Stead 1965a: 51-3, Fig. 29), but, unlike Group III terrets, it has a continuous curve around the inner edge.

#### 2.2.5. Group V: Lipped terrets (Nos 35-41)

Several terrets are characterised by a series of bivalvular mouldings in the form of pouting lips evenly spaced around the outer edge. Eight are known from southern Britain, while a further six have been discovered at Arras in Yorkshire (Stead 1965a: 42-3, Fig. 24.2) (Map 3). A further example of Group IV or V terret (which Leeds (1933a: 124) grouped together as his Type 1) has been claimed by Ward Perkins (1939: 191) to have been found at Bury Hill, Gloucestershire. However, the only published account of the piece (Thurnam and Davis 1865: p. 6 of Pl. 20), is insufficiently precise to indicate its precise form; the present location of the terret is not known.

Whereas the Arras examples have (or had) iron attachment bars, all the others are completely of bronze. In shape they vary from near-circular (No. 35) to a D (No. 37). No 37 has a unique feature, not found on any other terret, namely an ornamental attachment bar of an open design. The number of mouldings around these terrets ranges from six (No. 36) to eleven (Nos 38 and 40) it is probable that No. 39, of which about half survives, had more, possibly thirteen. The two terminal mouldings on No. 36 are not bivalvular as

on the other terrets, but rounded and thus very similar to those on the Group IV terrets from Hagbourne Hill (Nos 31-2).

The chronology of the lipped terrets is unclear. Nos 35 and 39, found respectively in pagan Saxon and late Roman contexts, were presumably discovered by chance in ancient times, and then re-buried. At Arras, the lipped terrets were twice associated with three-link bits, in the King's and Lady's Barrows respectively (Stead 1965a: 89-91). One of the two from Hod Hill (No. 38) was associated with a bronze pendant (No. 230) bearing ornament related to the Ulceby-Snettisham style, a style which also occurs on three-link bits (Nos 152,159, 161).

The origin of the form is unclear. As Leeds (1933a: 119) has suggested, it is possible that they were developed from Group IV terrets whose knobs were split in two to produce the characteristic bivalvular mouldings. Attractive though this hypothesis may be, there is no chronological evidence to either confirm or reject it. It may be that both types were contemporary, for certain features are shared. The resemblance of the end-knobs on the Hagbourne Hill and Glastonbury terrets has already been noted; these examples and one of those from Hod Hill (No. 37) have grooves bordering the outer edges of each 'lip'. The bivalvular, 'split-lip' modelling is also seen on other types of object -- for example, on the tip of the chape of the Bugthorpe scabbard (Piggott 1950: Fig. 2.5). A less pronounced moulding of the same character is to be seen on the tip of a scabbard-chape from Hunsbury (No. 263).

In conclusion, it may be noted that the smaller of the two lipped terrets in the Saffron Walden Museum (No. 41) is so small as to suggest that it might not have been used as a terret at all (Chapter 2.4).

2.2.6. Groups VI and VII: Winged terrets (Nos 42-63).

Two forms of terret are ornamented with three clusters of wings: in Group VI (Nos 42-50) the wings are set athwart the ring, while in

Group VII (Nos 50<sup>tres</sup>/63) they are set more or less in the same plane as the ring. Group VI is widely distributed from Somerset and Sussex to southern Scotland; the northern examples have been discussed by Simpson, née MacGregor (MacGregor 1962: nos 51-60, 65-9; Simpson 1966: no. 55). However, Group VII has not been found further north than Leicester (Map 4).

It is clear that both forms were current in the middle of the first century A.D., since examples of both are present in the Polden Hill hoard (Nos 45-6, 55-63). In both the north and the south of Britain, Group VI terrets are found in later contexts: 'circa 200 A.D.' at the 'Ditchley' Roman villa (No. 44), '60-90 A.D.' at Wroxeter (No. 50), and at Flavian Newstead (Curle 1911: 298, Pl. LXXV.2). When the forms came into fashion cannot be determined on present evidence, although it is possible that the idea of the lip-like wings on the transverse-winged form (VI) was modelled on the design of Group V terrets (Leeds 1933a: 119). Whilst on examples of Group VI there are always only two wings in each cluster, on Group VII terrets the number of wings varies from two to four; furthermore, in the latter group there is a much greater variation in the forms and arrangement of the wings.

Two pairs of terrets, from Rickinghall (No. 47) and Stanton (No. 48), have identical designs and ornament, as well as being almost identical in size; this, coupled with the fact that they were found only a few miles apart, suggests that both pairs were made in the same workshop at the same time. The proximity of their respective findspots suggests that the workshop may not have been very far away.

#### 2.2.7. Group VIII: Flat-ringed terrets (Nos 64-80)

Twenty-six terrets are distinguished by a flat ring with champlevé enamel ornament. Five sub-groups may be distinguished, of which the largest is considered first.

### 2.2.7.1. Sub-group VIII A: 'Westhall' terrets (Nos 64-76)

This form is characterised by a crescentic flange with a ridge along the inner edge, a ridge that diminishes as the flange increases in width. On all of these terrets the ornament is symmetrically arranged about the vertical axis and is identical on both faces. The ornament consists mainly of a motif, frequently a flattened out 'lyre', on all but one (No. 64) reserved against a crescentic field of red enamel. In addition to the red enamel, two of them (Nos 64 and 68) have clear blue glass inset into the metal; in both cases a thin film of red enamel was used as an adhesive to hold in the glass. On the specimens from Auchendolly, Kirkcudbrightshire (Maxwell 1886) (Fig. 26A), and Bolton Museum (Fig. 26B), there are discs of yellow enamel inset into the pattern, in addition to the field of red enamel. All of the VIII A terrets have circular insets in addition to the main pattern; where the inlay is missing, one can see that they were all drilled out, the bit used having a straight edge and a small central guiding-point, a type of bit still in use today (cf. Maryon 1954: Fig. 59). In certain instances, the similarity in design between terrets from different places is very close, which suggests that they were made in the same workshops. Nos 66 and 69 are identical, while the only difference between Nos 65 and 70 is that the central part of the design has been reversed.

Altogether, fifteen complete and four incomplete examples are known: sixteen from eastern England, from Kent to Lincolnshire, one from Auchendolly in southern Scotland, and another, hitherto unrecognised, from Hofheim in western Germany (No. 67) (Map 5); the provenance of the nineteenth example, now in Bolton Museum (Simpson 1966: 121) (Fig. 26B), is not known. I have named the variant after the hoard in which eight specimens were found: five of them (Nos 72-4) form a complete set, while the other three form part of another (No. 75). Since the 'Westhall' form, (like the other forms of



flat-ringed terrets), is clearly eastern English in primary distribution, it is probable that the single outlier in Britain - the incomplete specimen from Auchendolly - was imported into the area of its recent discovery in ancient times; it is of interest to note that the ornament of this terret, including the use of yellow discs of champlevé enamel, is very similar to part of the design on the Norton quadrilobate strip-union (No. 204), a form that is exclusively southern British and primarily east Anglian in distribution (cf. Chapter 8.2 .2.1). The fragment from the Roman auxiliary Erdkastell at Hofheim im Taunus must presumably have been taken there by a soldier who had either served or had been conscripted in eastern England after the Claudian Invasion. The dating of the Hofheim Erdkastell, to the Claudio-Neronian period, has recently been discussed by Schönberger (1969: 152-3). It is therefore of interest that an exact replica, apparently made from the same mould, of a cast bronze seal-box-lid ornamented with the image of a warrior, found in the Hofheim Erdkastell (Ritterling 1913: Taf. XII.23), has been discovered in the recent excavations at South Cadbury Castle, Somerset.

The Hofheim fragment is the only terret of sub-group A to have been found in a closely datable context. The context of the specimen from the excavations at Richborough (No. 70) does not appear to have been recorded. The Westhall hoard is difficult to date with precision, but it also contained other types of objects, namely baluster-ferrules (Nos 139A-F) and a pair of quadrilobate strap-unions (No. 208), both of which types are known from other contexts to have been current in the middle of the first century A.D. (cf. Chapters 5 and 8.2 .2.1).

#### 2.2.7.2. Sub-groups B, C, D, and E (Nos 77-80)

Four other forms of flat-ringed terrets may be distinguished, all of them differing from the Westhall form by the absence of the ridge along the inner edge.

On a terret from Colchester (No. 77; sub-group B), the flange

is again crescentic, but the ornament is very simple, consisting merely of rectangular and triangular insets variously filled with red, yellow, or blue enamel. It differs from all the other flat-ringed forms, in that the insets for enamel are also present on the rim; in this respect it resembles certain forms of knobbed terrets (Nos 87, 90-3).

On the fragmentary terret from Cawston (No. 78; sub-group C), the ring is broad and thin, and of even width and thickness all the way round from stop to stop; it bears simple enamel and pointillé ornament.

The next form (sub-group D) is represented by two examples, from Colchester and Rattlesden (Nos 79, 80). The ring is very thick, but, unlike the other forms of flat-ringed terret, it diminishes in width from the stops towards the top. For terrets which have attachment bars not of the 'saddle' type but parallel-sided and set on edge, these two are unique, since their stops are hollowed out; this feature is normally only found on terrets with 'saddle-type attachment bars.

The final form (sub-group E) is represented by three nearly identical pieces from London (Guildhall Museum Catalogue (London, 1903): 9, no. L.C. 98), Eauze, *dép.* Gers, France (Michon 1925), and El Faiyûm, Egypt (R.A. Smith 1925: 87, Fig. 81). All three have a crescentic flange, each with identical two-tone enamelled ornament, and, at the bottom, a hollow cube with an open base, enamelled faces and a horizontal iron pin within. In addition, the Eauze and El Faiyûm specimens have a broad groove close to both the inner and outer edges, which borders the crescentic zone of enamelled ornament. The method of attachment, by an iron pin within the hollow cube, differs from all other terret-fastenings of the southern British late pre-Roman Iron Age. However, the same method of attachment occurs on the set of four enamelled terrets from the 'Nanterre' cart-burial (Jacobsthal 1944: no. 174a; Duval 1961: 70, Fig. 29.10). It also

occurs on certain terrets of Roman date, those designated in Britain the 'Donside' or 'massive' type (Kilbride-Jones 1935; Simpson 1966: 88-97, 129-30, nos 102-17). Kilbride-Jones' view (1935: 451-3) that these terrets were a northern British innovation is by no means certain, despite their evident popularity in that area, for the form is widespread too in Roman Europe, occurring, for example, in Germany (Drexel 1911: 39, Fig. 3), the Netherlands (Bogaers 1952: 7, Afb. 3. no. 11), and Pannonia (Alföldi and Radnóti 1940: Taf. XXVII. 3). Indeed, Piggott (1955b: 63) has advanced the view that the form was of continental origin. However, there is as yet insufficient evidence to state where it originated. Since none of the subgroup VIII E terrets has been found in a datable context, and since there is no close parallel in the southern British late pre-Roman Iron Age for the running-scroll design that ornaments the three terrets, their date must remain uncertain. Furthermore, it cannot be considered certain that all three were necessarily made in Britain, particularly when it is considered that the only apparent prototype in the pre-Roman period for the method of attachment was found in France, the same country of origin as the Eauze terret. Nevertheless, it does seem probable that their enamelled flanges were modelled on the other Group VIII terrets. Whether the Faiyum specimen was made in Britain or in France cannot therefore be determined on the present evidence.

### 2.2.8. Group IX: Knobbed terrets (Nos 81-94)

Sixteen terrets from southern Britain have (or had) three knobs symmetrically disposed around them, one at the top, and one at each side. These terrets may be divided into two sub-groups, A and B. Sub-group A terrets have domed knobs, while the others have flat-topped knobs. (Map 6).

#### 2.2.8.1. Sub-group A: Terrets with domed knobs (Nos 81-6)

Of the first group, two are completely plain (Nos 83, 86) and are southern examples of a type most commonly found in southern Scotland and the Hadrian's Wall zone. The date at which these terrets were first made is not clear, but they were current in the north in the second century and probably also the late first century A.D. (Simpson 1966: 84-8, who on pp. 127-8 lists all the known examples).

The other five examples of this group (Nos 81-2, 84-5) have (or probably had) enamelled ornament: those from Colchester and Pentyrch (Nos 81, 84) on both the knobs and ring, the pair from Seven Sisters (No 85) on the knobs only; the terret from Dragonby (No. 82) may well have had enamel inset into the grooves on its knobs in the same manner as the Colchester terret.

No. 81 is unique in the British series of late pre-Roman Iron Age terrets in southern Britain, since the method of attachment was probably of the continental type with a loop projecting below the now incomplete basal flanges. Although its general form (save for the enamel and other ornament, and the knobs) is not

dissimilar to such late La Tène terrets as one from Castels bei Mels, Canton St Gallen (Menke 1968: Abb. 2), it is more closely matched by a Roman terret from the Seven Sisters hoard (Grimes 1951: Fig. 40, 15; C. Fox 1958: Fig. 78.15). However, it is of interest that No. 81 has cross-scored knobs that were once enamelled, since this technique of enamelling is quite rare in Britain but common on late La Tène objects on the Continent, for example, on some of the terrets (Menke 1968: Abb. 1.1).

The Pentyrch terret (No. 84), though knobbed, is clearly related to the flat-ringed terrets (Group VIII). However, although it is provided with a ridge along the inner edge like sub-group VIII A terrets, the ridge is of even size right the way round; this and the even width of the ring distinguish it from the sub-group VIII A terrets. The only other terret that has a flat ring of even width right the way round is No. 77; this terret, however, does not have the inner ridge. The separately made knobs on the Pentyrch terret are unique; they are not found on any other terret. Both the enamelled ornament on these knobs and the technique of one of them (no. 4 on the drawing) are closely paralleled on the steelyard-weight from the Santon hoard (No. 478C). The running-pelta pattern on the ring is closely matched, in niello, on a 'trumpet' brooch from Dinorben (Gardner and Savory 1964: 134-5, Fig. 16.1). Another feature of this terret is the dotted lines that border all the enamel insets. Although continuous incised lines bordering enamel insets are a common feature

on such objects as the 'Westhall' flat-ringed terrets, the use of dotted lines is unique. Dots punched along incised lines are, nevertheless, seen on one of the 'harness-brooches' in the Polden Hill hoard (No. 244); it is of interest that both the Pentyrch and Polden Hill pieces are also ornamented with circular facets executed with a ring-punch. All these features combine to suggest a mid-first century A.D. date for the Pentyrch terret.

The knobs on the Seven Sisters terrets (No. 86) are each ornamented with a quatrefoil motif inset with enamel, originally probably in two colours, the background offsetting the 'leaves'. The motif is also seen, halved, on the pair of strap-unions (No. 212) and on the "derivative three-link" horse-bit side-rings (Nos 166A, B) from the same hoard; it is likely that all six pieces formed part of the same set of harness. Slightly different enamelled quatrefoils are also seen on terrets from Játiba and the Saham Toney hoard (Nos 90-3). The markedly oval vertically-set stops on the Seven Sisters terrets are paralleled only on the Játiba terret and the pair from Saham Toney (No. 94). The Seven Sisters hoard contains Roman auxiliary harness, generally regarded as booty, and has been dated on historical grounds to the period 49-74 A.D. (Jarrett 1965: 37).

#### 2.2.8.2. Sub-group B: Terrets with flat-topped knobs (Nos 86 bis-94).

The second group of knobbed terrets is represented by nine examples from southern Britain (Nos 86 bis -9, 91-4), by other from the north (MacGregor 1962: no. 61 Simpson 1966: nos 56-69), by one from

northern Ireland (Jope 1950: 59, Fig. 1.3), and by one from Spain (No. 90). The surfaces of the knobs of all the southern British examples were inlaid with enamel in the champlevé technique. The knobs are either rounded (Nos 86 bis, 87, 91-3) or rectangular in plan (Nos 88, 90, 94); the form of the knobs on the pair of terrets from Saham Toney (No. 94) is unique. With the exception of Nos 86 bis, 88 and 94, all these terrets have a flat outer edge ornamented with enamel, and a rounded inner edge. Four of the Saham Toney terrets (Nos 91-2, 94) and the one from the Cambridgeshire Fens (No. 87) have insets for enamel on each face; in each case, the insets are arranged in triangular panels, ~~the~~ apices of the triangles pointing inwards, towards the centre of the ring. On two of the terrets from Saham Toney (Nos 91-2) the panels are linked by grooves, originally probably filled with enamel; the ornament and design of these two suggest that they formed part of the same set of harness. The markedly oval vertically-set stops on terrets from Játiba and Saham Toney (Nos 90, 94) deserve attention, since they are only elsewhere closely paralleled on the pair of terrets from the Seven Sisters hoard (No. 85).

As noted above, the flat-topped terret is not an exclusively southern type, since several examples have been found in the north. However, only one or two of these northern terrets have an ornamented flat outer rim (e.g. Simpson 1966: no. 56). It is one of these northern terrets that leads me to include in this group the

now knobless fragment from Colchester (No. 89): a fragmentary terret with a flat-topped knob with red enamel inlay possibly from Fremington Hagg, North Riding (Simpson 1966: no. 60), which has the same flattened outer rim with discs of red enamel inset into it, the same rounded inner edge, the same ridges on the sides of the rim and across the faces and rim not far from the stops.

It is evident that the flat-topped terrets were current in southern Britain in at least the middle of the first century A.D., since No. 89 was found in a pit that was assigned to Period VI of the Sheepen Farm site at Colchester (dated 61 to circa 65 A.D. by the excavators) since the *Játiba* specimen is unlikely to have been exported to Spain before the Claudian Invasion, and since there are close stylistic parallels with the terrets in the Seven Sisters hoard which has been dated on historical grounds to the period 49-74 A.D. (Jarrett 1965: 37). In view of the uncertainty concerning the original composition of the pre-Flavian hoard of Roman military equipment (and other objects?) from Fremington Hagg, North Riding (G.A. Webster 1971: 107-8), the alleged presence therein of flat-topped knobbed terrets cannot be used for chronological argument.

#### 2.2.9. Miscellaneous forms (Nos 95-9).

Five terrets remain to be considered (Map 7). None is closely comparable with any of the forms considered above. There is no close parallel for the form of the collars on No. 95. However, the enamel-filled 'slashes' across them can be paralleled on a



transverse-winged terret from a Flavian context at Newstead (Curle 1911: Pl. LXXV.2; Simpson 1966: no. 55), on a strap-union from Carlisle (Henry 1933: Fig. 9.7) and a 'dress-fastener' in the Middlebie hoard (Childe 1935: Pl. XV). The lanceolate 'leaves' in the rectangular panels on the ring itself can be paralleled, made up into rosettes, on such pieces as the Seven Sisters terrets (No. 86).

The Ixworth terret (No. 97) seems to have vestigial or greatly-worn transverse-winged mouldings; if so, then it should be grouped with the transverse-winged type (Type VI). Another terret related to the transverse-winged type is No. 98, from Melandra Castle. However, the method of attachment, with hollow box with a rectangular loop below, is of Roman type, and is paralleled on such Roman terrets as those from Newstead (Curle 1911: Pl. LXXV.12) and Wiesbaden (Fabricius 1909: 95, no. 41, Taf. X.48). This combination of British and Roman traditions, and the context of the piece suggest that it was made in the second half of the first century A.D.

The collar around No. 99 is unique; however, the red champlevé enamel discs with their incised borders suggest a date in the middle of the first century A.D., being paralleled on such objects as the Group VI terrets.

The Glastonbury terret (No. 96) is of unique design; indeed, I am by no means certain that it was used as a terret, for the method of attachment, by means of rivets through two discs at the base, cannot be paralleled.

### 2.3. Terrets and the design of carts and chariots

Although the forms of British terrets have been often discussed, little effort has been devoted to determining where on the vehicle they were attached, and the ways in which they were secured. The various

ways in which they were attached also have a direct bearing on the designs of the vehicles, in particular, on the forms of the yokes and the front of the carriage. As will be demonstrated below, there is very little direct evidence with which to attempt a solution of these problems.

Stead (1965b: 259) has pointed out that it may not be sound to assume that the vehicles buried in graves in the La Tène period both in insular and mainland Europe were the same vehicles as the war-chariots known from contemporary allusions in Greco-Roman literature. Since the former may have been specifically designed as hearses, it cannot be assumed that any inference that can be made about their structure from the surviving fragments has any direct bearing on the designs of vehicles used for other purposes. However, Stead did overlook one point, namely the occurrence of pronounced wear-facets on many of the metal vehicle-fittings (as well as on the bridle-bits) found in the Yorkshire cart-burials. This does, therefore, suggest that the vehicles concerned had been extensively used before interment; nevertheless, one cannot exclude the possibility that they were adapted for funerary purposes. Since I have not examined the relevant material at first hand, I do not know whether the same equipment in the continental cart-burials was new or old when buried; however, Duval

(1961: 70) has observed that there is no indication that the four terrets from the Nanterre cart-burial had been greatly used before interment.

From an analysis of the harness in the 'Stanwick' hoard, Leeds (1933a: 121-2) was able to deduce that terrets were made in sets of five in late pre-Roman Iron Age Britain: one large, and four small. Other sets, from Westhall (Nos 72-4), and from the King's Barrow at Arras (Stead 1965a: 43), confirm this deduction. On the Continent, too, sets of five seem to have been made at least occasionally, since one large and four smaller terrets were found in the cart-burial at Mezek (Filov 1937: 111, nos 29-30, Abb. 69). A set of four identical terrets was found in the Nanterre cart-burial (Duval 1961: 70, Fig. 29.10). The four smaller examples in each set are generally considered (for example, by Stead 1965a: 43-4) to have been attached to the yoke in pairs, thus, two for each pony, one for each rein, on either side of the neck of each pony. On these smaller terrets the wear-facets are invariably more pronounced on one side than on the other; this indicates that the reins that passed through them did not run in straight lines from the bit-rings to the driver, and that they subtended an angle at each terret. However, on the larger terret in each set there is no unilateral preference in the wear-facets, which suggests that the larger terrets were used to gather together all four reins, and/or that they were placed on the central axes of the chariots.

Where then were the larger terrets placed? Stead (1965b: 260) has suggested that they were placed at the front ends of the cart-poles; however, if this were true, the four reins that passed through the smaller terrets cannot also have passed through the larger ones. The wear-facets around the inner edges of the larger terrets would therefore have been caused by something other than the reins. It is difficult, however, to envisage a use for the larger terrets in <sup>this</sup> position, unless there were a further pair of ponies out in front in the manner of some Roman wagon-teams (Vigneron 1968: Pl. 53), and the fifth terret were therefore needed to bring together the reins from the front pair of ponies. Teams of four ponies arranged in pairs in tandem only appear to have been used for drawing wagons, while teams of four used with carts or chariots always appear to have been arranged side by side in a single row, two on each side of the pole (Vigneron 1968: Pls 47-8, 51). But since there is no evidence that teams of four ponies were ever used by the Celts to draw two-wheeled vehicles, it is clear that the large terret in each set of five must therefore have been placed either further down the pole towards the carriage or on the top of the front of the carriage itself.

Contra C. Fox (1947a: 27) and Piggott (1952), Stead (1965b: 262) has shown that there is ample evidence for a front to the Celtic chariot. Julius Caesar's statement (De Bello Gallico, IV.33): "Aurigae.... per temonem percurrere et in iugo insistere et se inde in currus citissime recipere consuerint" is often taken to imply that British chariots were open at both the front and the back (C. Fox 1947a: 27 Piggott 1952; Lynch 1970: 262). Support for this argument

is taken from the French Early La Tène cart-burials in which the bodies of the deceased appear to extend beyond the front of the vehicle; but, as Stead (1965b: 259) has pointed out, it cannot be assumed that the vehicles interred in these burials were necessarily chariots rather than mere hearses. Furthermore, it may not be correct to suggest that the floor of the vehicle was always more or less square in plan, as Piggott (1959a: Fig. 10) has assumed in his restoration of the Somme-Bionne cart; it might have been rectangular, with the wheels towards the back rather than in the centre of the sides. That this may have been the case is suggested by the plan of the La Gorge-Meillet burial (Stead 1965a: Fig. 7), in which a group of cart-fittings is disposed around the feet of the deceased well forward of the front edges of the wheels. As Stead (1965b: 262) has noted, Caesar's statement does not preclude a closed front to the chariot, for it would have been quite easy to jump over the front onto the pole. However, it is not certain that Caesar's statement does in fact refer to British charioteering, since it is generally agreed that the passage immediately preceding it is cribbed without acknowledgement from the Celtic ethnography of the Greek Posidonius (135-51 B.C.) (Tierney 1960: 211, fn. 98); a slightly different version of the same Posidonian passage is given by Diodorus Siculus (V. 29; Tierney 1960: 206). Since Posidonius was writing early in the first century B.C., since the known Caesarian crib applied originally to Gallic, not British chariots, and in view of the parenthetic nature of the Caesarian passage

concerning the use of chariots in warfare, it cannot be accepted as certain that the statement quoted above does apply to British and not to Gallic practice.

A position on the top of the front of the chariot itself would seem to be the most reasonable siting for the large terret in each set, for it would have been difficult to have attached such a terret as No. 72 to the pole. The pair of circular stops on No. 72 are set obliquely, and, although they are hollowed out underneath, the edges of their undersides form flat planes. These considerations suggest that the stops rested on the slopes of two sides of a triangle at the point at which the sides met, or on a very gently curving surface. The attachment bar of the terret has an inverted V-shaped section at the middle, and is convex when the terret is viewed face-on. This suggests that the terret was seated on a cup at the top of the chariot-front. It seems likely that a special seating would have been carved out so that the upper surface of the attachment bar would have lain flush with the adjoining surface of the wood. This argument is illustrated by Fig. 211 . The terret would presumably have been held in position by thongs or straps wound round the attachment bar and the wooden spar that formed the upper edge of the front of the chariot. Since the manner in which this and similar kinds of attachment bar were seated on their mounts is akin to that of a saddle, they have here been termed the 'saddle' type.

The four smaller terrets in each set are generally assumed to

have been attached to the yokes of the ponies that drew the chariots. Since analogous objects are known to have been affixed to yokes in the Roman world (Alföldi and Radnóti 1940), this view is probably correct. The four slots in the wooden yokes from La Tène (Vouga 1923: Pl. XXXV. 1, 2) are generally used to support this argument, but it is possible, on analogy with Jacobeit's reconstruction (1952) of the single-yoke of Roman date from Pforzheim (Dauber 1950: 231-5, Taf. 33), that the holes were used for the attachment of the ends of a breast-band or simple kind of collar. The same applies to the so-called 'rein-holes' in the wooden yoke from northern Ireland (Jacobeit 1953). Furthermore, however probable it may seem that the terrets were attached to yokes, there does not appear to be any direct evidence for this from any of the continental La Tène cart-burials. In only two cart-burials where the grave-goods were planned in sufficient <sup>detail</sup> and where terret-rings were discovered - the ones at Châlons-sur-Marne (Stead 1965b: Fig. 1) and La Gorge-Meillet (Stead 1965a: Fig. 7) - the positions of the terrets indicate that they were not affixed to the yokes. Finally, it is by no means certain that the yokes from La Tène and northern Ireland were in fact used with chariots as is generally assumed (Piggott 1949b), since they are so massive. There are frequent allusions in Classical literature to the snapping of chariot-yokes when a fractious chariot-pony reared while in harness (Vigneron 1968: 111). This would hardly have been possible with a yoke of such massive build as those from La Tène and

northern Ireland. Since the Celts were renowned in the Greco-Roman world for their prowess in chariotry (Powell 1958: 106 ff.; Piggott 1965: 240 ff.), and in view of the dexterity with which the chariots were used on the battlefield and elsewhere, it seems improbable that parts at least of La Tène chariots should have been of a considerably more massive build than those of the Classical world. It seems more likely that the yokes from La Tène and northern Ireland were harnessed to oxen; they may be compared with the yoke on a model bronze plough from Florence (A.H. Smith 1920: Fig. 209). Indeed, the bronze mountings from the 'La Bouvandeau' cart-burial (Jacobsthal 1944: nos 168 and 171) indicate that the tip of the pole and the yoke were considerably slighter than the yokes discussed above; as Stead (1965b: 262) has noted, there is no doubt that Jacobsthal's no. 168 was the tip of the pole and not a yoke-terminal as has been recently claimed (Piggott 1969: 379-80).

In his reconstruction of the Llyn Cerrig Bach chariot, C. Fox (1947a: 25-7, Fig. 13; 1947c: 117-8, Fig. 1, Pls XVII, XVIIIb; 1958: Pl. 6) appears to have been unaware of the existence of the yokes from La Tène, for he used the high-peaked arched yoke-form of the type known, inter alia, from the Senon relief. However, unless one accepts Radnóti's hypothesis (1958) that the Brno-Maloměřice open-work bronze mounts were once attached to a yoke, rather than the more generally accepted view that they belonged to a wooden flagon (Hucke 1942; Klindt-Jensen 1953: 68-70, Fig. 17; an alternative



reconstruction is advanced in Chapter 21.4), there is no evidence for the use of this kind of yoke in western and central Europe in pre-Roman times. It is therefore more probable that the British pre-Roman yokes were of the more normal round-arched design favoured by the continental Celts but also used in Roman times (Piggott 1949b; Radnóti 1961: Abb. 13, right).

The longitudinal sections of continental Early La Tène cart-burials shows that another feature of the reconstruction of pre-Roman two-wheeled vehicles may not be altogether correct, that is, the longitudinal profile of the pole. Following Günther's reconstruction (1934: Abb. 1) of the cart from a burial at Kärlich, it has been assumed, for example, by C. Fox (1947a: Fig. 13) in his reconstruction of the Llyn Cerrig Bach chariot, that the pole sloped obliquely upwards after a short dog-leg immediately in front of the car. The short length of pole visible on the Venetic chariot depicted on a recently published stele from Padua (Frey 1969; Harbison 1971: 171, Pl. XXV), appears to be of this character. However, such a pole cannot easily be reconciled with the longitudinal profiles of such grave-pits as those from Châlons-sur-Marne, Pont-Faverger, La Côte d'Orgemont and La Gorge-Meillet (Stead 1965a: Figs. 5.5 and 6.2, 7, 9). The height above the floor of the grave, and the horizontal plane of the pole-trench in these burials suggest rather that the pole curved sharply upwards immediately in front of the body of the vehicle and then ran horizontally forwards towards the yoke in a manner

similar to that apparently represented on certain Classical and ancient Near Eastern chariots (Vigneron 1968: Pls 43c and 72d; Kossack 1971: Fig. 35.2). Furthermore, it may be incorrect to assume that the yoke was always placed on top of the pole, for the relatively greater depth of the yoke-trenches in the cart-burials at Châlons-sur-Marne (Stead 1965a: Fig. 5.5) and Somme Bionne (Piggott 1959a: Fig. 10) may suggest the reverse, although ancient pictures do from time to time clearly show that the yoke was placed onto the pole (cf. Vigneron 1968: Pl. 60b).

How then were the smaller terrets in each <sup>set</sup> attached, assuming that they were mounted on yokes? As an example, may be taken the smaller terrets from Westhall (Nos 73-4) that belonged to the same set as the large one discussed above. The type of attachment that occurs on them is found, with variations, on the majority of the smaller terrets of Groups I, and VI-IX. On the Westhall terrets a parallel-sided bar of rectangular section is set on edge between the flat faces of two vertically-set, domed stops. On certain other terrets the stops are set obliquely, the planes of their flat faces pointing towards the centre of the ring (e.g. No. 76). On a terret in the Saham Toney hoard (No. 92) the stops are also set obliquely but are unique in that they splay outwards, that is, if projected, the planes of the flat faces of the stops would intersect below the terret; this terret also has a very rare kind of attachment bar which is considered below. Let us for the moment return to the Westhall terrets. It is clear from the

manner in which the rectangular-section attachment bars of the Westhall terrets are set on edge, that the terrets cannot merely have rested on the top of the yoke and have been strapped into position; if this were the intended manner of attachment (as appears to be the case for terrets of Groups III-V), then the plane of the attachment bar would surely have been placed perpendicular to that in which it is actually set. The vertical plane of the bar suggests rather that the bar was slotted into a groove on the top of the yoke. In view of the domed circular stops at either end of the bar, it seems likely that the slot was formed by two parallel upstanding ridges, each no longer than the length of the bar on the terret and that the stops were intended to prevent lateral movement of the terret. It can only be presumed that the terret was held in position by straps or the like wrapped round the yoke and passing over the upper edge of the attachment bar. The suggested arrangement can be better understood by reference to Fig. 211 .

On a few terrets the attachment bar either has an indented lower edge (cf. No. 92) or is provided with a projecting tang (cf. No. 11). Such features, when carved in reverse at the bottom of the slot between two parallel ridges of the kind envisaged above, would serve to make the attachment of the terrets more secure.

#### 2.4. 'Mini-terrets' (Nos 100-105)

Although they do not appear to have been used as terrets, a further group of objects of terret-like appearance remains to be considered. At first sight, they seem to be terrets of a relatively plain kind, but

certain features, notably their very small size (in width they vary from 19 to 28 mm), seem to preclude such a purpose. Altogether thirteen examples are known to me: seven from southern Britain (Nos 100-105), five from Yorkshire, two each from the King's Barrow at Arras (Stead 1965a: 44, 90) and the Flavian coin-hoard at Honley (Richmond 1925: Figs. 2 (top row) and 3.10), and one from the Hunmanby cart-burial (Sheppard 1907: centre of photograph opposite p. 487), and one from the cemetery at La Courte, Leval-Trahegnies, Hainaut province, Belgium (Mariën 1961: 49, no. 61, Fig. 20) (Map 8). Like Group I terrets they vary from a D to a near-circle in outline; furthermore, each of them has a pair of stops at the ends of a short attachment bar. However, more than half of them differ from every kind of terret, in that they are flat at the back, that is, of plano-convex section; the rings from Arras, Hod Hill (No. 100), Hunsbury (No. 101) and Trevelgue (No. 105) are of this type, as is one of those from Meare (No. 103).

In three instances, at Arras, Hunmanby, and La Courte, their contexts show that these rings were not intended as terrets, for 'true' terrets were found with them. Whatever their real function, it seems fair, on the basis of these three contexts, to suggest that these rings were in some way connected with carts or with the harness of the ponies that drew them; unfortunately, in all three cases their positions in the graves were not accurately recorded. However, the occurrence of a pair in a distinctly 'non-horse' context in the Honley coin-hoard may

suggest that it is with people rather than with ponies that these mini-terrets should be connected. In two other instances, at Arras and at Hod Hill, they were also found in pairs.

The time-span of these pieces seems to run throughout the first centuries B.C. and A.D. The King's Barrow, Arras, and Hummanby cart-burials, are, as Stead has shown (1965a: 82-4), difficult to date, but the La Courte specimen belonged to a set of cart-fittings of 'La Tène III' date (Mariën 1961: 45-9, nos 56-9). It is clear from the resin-filled insets on this piece that it is of local manufacture and not an import from Britain, for the other pieces from the same set of equipment, none of which is of British type, were also ornamented with resin-filled insets. The Trevelgue ring was found with a linchpin (No. 114), concealed in the wall of a hut that had been demolished in the second century A.D.; other finds from the hut included late pre-Roman Iron Age pottery and an as of Trajan dated to about 107 A.D. As Ward Perkins (1941: 65) has pointed out, this evidence is of little value in dating either the linchpin or the mini-terret. However, the beaded ornament on the stops of the Trevelgue mini-terret is closely paralleled on the three-link bits from Ringstead (No. 159). The only other rings that have been found in a chronologically indicative context are the pair in the coin-hoard from Honley of which the latest coin is one of A.D. 72-3.

It is possible that these rings served the same purpose as the slightly larger ornamental ring-pendants from Glastonbury and South

Cadbury (Nos 228-9). The former has the same groove around the outer edge as the ring from La Courte; similar grooves on a ring fragment from Glastonbury (Bulleid and Gray 1911: Pl. XLIII. E 94) and on a small 'terret' from Meare (No. 13) may indicate that these pieces too served the same purpose as these mini-terrets. That the latter is in fact one of these mini-terrets is suggested by the absence of wear on the tops of the stops (as is always present on worn true terrets) and its occurrence on the attachment bar only. It should also be noted that though there are signs of wear on the stops of No. 12 there is none on their tops.

Finally, there is the very small lipped terret (Group V) of unknown provenance in the Saffron Walden Museum (No. 41). Although there is a larger example of the same type in the museum, it is possible that the smaller piece was not a 'true' terret but served the same function as the mini-terrets. It is no more than 22 mm wide, and thus well within the range of the mini-terrets; it is certainly much smaller than any other 'true' terret.

### 2.5. Conclusions

A few final general points concerning the terrets may be made here. Almost all of the British examples are of bronze; those which include iron in their fabric are probably nearly all of relatively early date (Groups II, III, IV). Moreover, since Groups III, IV and V do not have fully developed stops at either end of the attachment bar, it is probable that they are earlier in date than those which do have such

stops. That they are indeed earlier is suggested by their absence in early Roman contexts; those types that do occur in early Roman contexts all have the fully-developed stops. It would be difficult to argue that the difference is cultural rather than chronological, since the respective distributions of Types III, IV and V overlap with the distributions of those types that do have fully-developed stops.

However, whatever the precise forms of the several parts of all the terret-forms, it is worth emphasising that only two terrets (No. 81 and the Group VIII E terret from London) show any sign of continental influence in their designs. The British terrets must therefore almost exclusively be considered as British innovations. To anticipate the arguments presented in the following chapters, the same is true of almost all the other kinds of cart- or chariot-fittings and horse-harness considered in this thesis. In view of this, arguments concerning features of the design of vehicles in Britain, that lean heavily on continental analogies, must be treated with a great deal of reserve. The same is true of the use of the literature of Early Irish tradition, for only one cart- or chariot-fitting, a Group IX B terret, that has been discovered in Ireland can be matched in the archaeological record of Britain. The situation may well have been similar to wagon-design in Britain in recent times, when regional forms abounded (Jenkins 1961; 1962).

### 3. Linchpins (Nos 106-18)

#### 3.1. Introduction

The metal objects that are attached to the axles of wooden vehicles to hold the wheels in position are known as linchpins. In this chapter the forms current in the southern British late pre-Roman Iron Age will be considered; then the implications that these objects have concerning the designs and sizes of naves and axles will be discussed.

#### 3.2. Classification

Three main forms of linchpin are represented in southern Britain before the Claudian Invasion. They are distinguished by the shapes of their terminals. Linchpins have been listed and discussed by Ward Perkins (1940; 1941), C Fox (1947a: 19-20, 78-9), Stead (1965a: 32-5), and Simpson (1966: 132-7). However, both Ward Perkins and Simpson included Roman examples in their studies. Only those known or likely to have been made up to the middle of the first century A.D. are considered here.

##### 3.2.1. Group I: Ring-headed linchpins

This all-iron form has a large loop at one end; the other end of the pin was bent at an angle to hold it in position, after it had been slotted into the axle. Four examples are known: from Bigbury (Jessup 1933: 106, Pl. IIIA, top left), the Breiddin hillfort (C.R. Musson: pers. comm.), Llyn Cerrig Bach (C. Fox 1947a: no. 43), and Worthy Down (Hooley, et al. 1931: 189, Pl. VI Fig. 82). The iron ring-headed pin from the



'Polden Hill' hoard (Harford 1803: 93, No. 18, Pl. XX. Fig. 3), listed by C. Fox as a linchpin (1947a: 78), is too small to have served this purpose; moreover, it does not have the transverse perforation below the head, that is present on all certain linchpins. The piece is further discussed in Chapter 7.6. The form has continental forerunners of which the pin from Jonchery-sur-Suippes is a good example (Stead 1965a: Fig. 16.3). The bent pin, so common on continental La Tène linchpins (cf. Jacobsthal 1944: nos 159, 161-2, 164), is only found on the ring-headed form in Britain.

It is possible, as C Fox (1947a: 20) has suggested, that the form provided part of the inspiration for the linchpins from Middleton-Enthorpe (Mortimer 1905: 360, Fig. 1022) and the 'Stanwick' hoard (MacGregor 1962: nos. 70-3, 79), each of which has a bronze ring on the top of the upper terminal.

### 3.2.2. Group II: Crescent-headed linchpins (Nos 106-8)

Two complete and two incomplete examples of pre-Roman linchpins with crescentic heads are known. One, from a 'Belgic' level at Maiden Castle, Dorset (Wheeler 1943: 275, Fig. 90.10), is completely of iron. The others have bronze terminals. Of the two from Colne Fen (Nos 106-7), only the crescent-headed upper terminals remain, although in one of them (No. 107) the stub of the iron shank is preserved. The King's Langley linchpin (No. 108) is complete, with bronze terminals at both ends of the iron shank.

These terminals are of cast bronze, presumably cast by the cire perdue technique. The terminal of No. 107 was actually cast onto the upper end of the shank, but it is probable that the upper terminals of the two other pins were merely slotted on. After the King's Langley pin had been fitted into the axle, the lower terminal would have been slotted on; the fit must have been very nice, for, had it not been so, this terminal would soon have dropped off.

The enamelled ornament on both the King's Langley and the Colne Fen terminals is characteristic of many objects current in south-east England in the middle of the first century A.D., for example, Group VIIIA terrets (Chapter 2.2.7.1). Although the King's Langley linchpin was a single find, the Colne Fen terminals were found with three 'Baluster ferrules'(Nos 137A-C) which are discussed in Chapter 5.

A fifth, broken example of this type of linchpin, from Tiddington in Warwickshire (Ward Perkins 1940: 358, 361-2, 367, Fig. 4.2), may also be of pre-Roman date, since the mouldings on the crescentic head are reminiscent of the modelling of Group V terrets (Chapter 2.2.5). Another linchpin with a very similar head to the Tiddington specimen has recently been discovered at Chigwell, Essex; it is now in the Passmore Edwards Museum at Stratford, East London (I. Robertson: pers. comm.). Since the Chigwell linchpin was found by the side of a Roman road, it is possible that both of these linchpins are of Roman date.

Linchpins with either bronze or iron crescentic heads were first

made in Hallstatt times (cf. Riek 1962: Taf. 3.28d). They continue to be fashionable, albeit intermittently, throughout the La Tène period and into Roman times (cf. Joachim 1969: 104-6, Abb. 4.5 and 6). The projecting flange above the socket on one of the Colne Fen terminals (No. 106) is an unusual feature, but is closely paralleled on late La Tène crescentic linchpin-head from Plaidt, Kr. Mayen, in the Rhineland (Joachim 1969: 105-6, Abb. 4.7).

### 3.2.3. Group III: Vase-headed linchpins (Nos 109-17)

This form of linchpin is characterised by a straight shaft of iron capped with horizontally-pierced bronze terminal shaped either like an inverted pedestalled vase or like a baluster, and fitted with a bronze foot generally shaped like the upturned hoof and fetlock of a horse. Nine complete examples and the upper terminals of two others have been found in southern Britain, whilst others have been found in the north at Arras (Stead 1965: Fig. 15.1), in the 'Stanwick' hoard (MacGregor 1962: nos 76-8), and at Traprain Law (Burley 1958: 196, no. 359a; Simpson 1966: no. 120) (Map 9).

Most of these pins have an upper terminal shaped like an inverted pedestalled vase, but three from Bigbury (Nos 110-1), of which two form a pair (No. 111), have instead a baluster-shaped terminal. These three have a simpler kind of lower terminal. The similarity of their upper terminals to the 'baluster ferrules' (Nos 136-9) led Ward Perkins to consider the latter to be linchpin-heads too; however the absence of the transverse perforation rules out

this interpretation. Moreover, there are other reasons, set out below in Chapter 5, for rejecting this interpretation.

Many of the vase-headed linchpins have pronounced wear-facets on both terminals caused by the chafing against them of the noses of the wheel-naves. These facets are sometimes so pronounced that parts of the terminals have almost been reduced to a D in cross-section. Indeed, one upper terminal (No. 117) was made with such a section, very probably because its maker had observed these facets and had designed the terminal in this manner in order to avoid the wastage of metal normally incurred. Ward Perkins (1940: 359) designated this kind of linchpin with the epithet "Yorkshire", since he had reason to believe that the Arras example was <sup>the</sup> earliest in date. This was based on the assumption that the form was derived from a "Marnian ancestor" and that it was developed in Yorkshire by "Marnian invaders". However, he did not identify the type of linchpin from which it was presumed to have been derived. Furthermore, in his analysis of the Yorkshire linchpins Stead (1965a: 35) compared the Arras specimen with a ring-headed linchpin from Middleton/Enthorpe that also has a lower terminal shaped like the upturned hoof and fetlock of a horse (Mortimer 1905: 360, Fig. 1022), and concluded that the two of them "belong to a general type well-known on the continent in La Tène I, but (that) the only close parallels are British examples in La Tène III or first century A.D. contexts."

However, neither linchpin bears the slightest resemblance to any

yet found on the Continent. It is therefore clear that Group III linchpins were a totally British innovation. Moreover, since none of the Yorkshire cart-burials can be dated with precision (Stead 1965a: 81-4), it cannot be argued with conviction that Group III linchpins were first made in Yorkshire rather than in any other part of England or Wales.

The ornament on some of the Group III pins suggests that the form was relatively long-lived, for, while Nos 113 and 115 bear ornament related to the 'Ulceby-Snettisham' style, the two unprovenanced upper terminals (Nos 116-7) have champlevé ornament of a kind current in the middle of the first century A.D.

#### 3.2.4. Uncertain linchpin (No. 118)

A single bronze terminal from Colchester (No. 118) has also been claimed as a linchpin-head. However, it does not have the transverse perforation that occurs on all certain linchpin-terminals; moreover, the ridged and circular-sectioned iron shank that it surmounts is unique.

If the object was a linchpin, then it is possible that it was based on a form of all-iron linchpin that was made in central and northern Europe in the first centuries B.C. and A.D. The linchpins from Dejbjerg (Klindt-Jensen 1950: Fig. 57), Rosenfelde, Kr. Regenwalde (Hinz 1963: 13, Abb. 3.5), and Staré Hradisko, Moravia (Meduna 1961: 43, Nos 602-1697-8, Taf. 38.1 and 5), each have two circular loops and a central projecting loop or knob at one end, whilst those

from Husby, Kr. Flensburg (Raddatz 1967: 14, 27, 33-4, Abb. 6, Taf. 3.1-4, 14.3, 5), have solid discs instead of the open loops. Radiographs have indicated that each of the Husby pins is made of three rods welded together; the tops of the outer pair of rods are bent back on themselves in swan's neck fashion to form two oval lateral projections, while the top of the third, central rod is rolled up perpendicular to the plane of the two oval projections (*Ibid.*: 27, Abb. 6). It is just possible that the bifurcating incised line around the socket of the Colchester terminal - with its suggestion of a tripartite construction - is skeuomorphic of the type of construction represented by the Husby pins.

A few other objects have been claimed as linchpins. One of these, however, ~~from~~ Wroxeter (Bushe-Fox 1916: 26, Pl. XVII.22), has a bronze shank; the piece is exactly paralleled by a knobbed pin of Roman date from the continent, that was used to secure a bronze mount onto the end of a yoke (Mercklin 1933: 128, Abb. 48). A bronze object mounted on the end of a fragment of an iron shank from Hod Hill has also been claimed as a linchpin (Brailsford 1962: 18, Pl. XIII.I136); whatever its intended function, the shank seems to have been too slight for this purpose. These, together with the 'baluster ferrules' already mentioned and to be discussed below in Chapter 5, seem most improbable candidates for inclusion as linchpins.

### 3.3. Linchpins, axles and naves.

The purpose of linchpins is to prevent the wheels from falling off the

ends of their axles. In early Europe the axle was probably always pegged or nailed to the frame of the vehicle and never turned with the wheels, as can be seen on the Dejbjerg wagon (Klindt-Jensen 1950: 87-100, Fig. 60). In the manufacture of carts and wagons in Britain in recent times, the ends ("noses") of the naves of the wheels were set flush with, or projected slightly beyond, the ends of the axle (cf. Jenkins 1961; 1962). The linchpin was slotted through the axle inside the nave. A small slot known as the "stopper-hole" was cut in the nave to admit the pin; this hole was filled with a "stopper" which was held in place by a "stopper-clasp" (Ibid.; Sturt 1923: 223). No such stopper-holes exist in the naves of the few pre-historic and Roman wheels that have been discovered; the axle always seems to have projected beyond the nose, and it was through this projecting part of the axle that the linchpin was slotted (MacDonald and Park 1906: 92-8, Fig. 34; Bulleid and Gray 1911: 328, 336, 337-40, Figs. 99, 110, 112; Curle 1911: 292-4, Pl. LXIX.2; Vouga 1923: 91-4, Fig. 9; Pl. XXXI.3; Piggott 1949a; Riek 1962: Taf. 3.28; Piggott 1965: Fig. 137; MacCormick et al. 1969: 23-4, Fig. 5).

The pronounced wear facets, that are visible on the bronze terminals of many of the British pre-Roman Iron Age linchpins, were caused by the chafing against them of the naves. None of the linchpins is longer than 132 mm, whereas the diameters of the noses of the naves found in Britain fall within the range 120 to 160 mm (Appendix II). This suggests that the linchpins did not project above

and below the noses of the naves; the same seems to be true of the Continental pre-Roman linchpins, for example, the linchpin and nave from Grave VI of the Hallstatt D Hohmichele barrow (Riek 1962: Taf. 3.28). It might fairly be argued, however, that the ring-headed iron linchpin from Worthy Down (Hooley et al. 1931: 189, Pl. VI Fig. 82) did project above and below the nose, as it is 180 mm long. In his reconstruction of a Celtic chariot, C. Fox (1958: Pl. 6) shows just such a pin projecting in this way.

The maximum possible diameters of the axles of the British pre-Roman Iron Age carts are indicated by the distances between the terminals of those linchpins that are complete, and by the inner diameters of the two finished naves from Glastonbury and of the nave from Holme Pierrepont. The range of measurements is from 45 to 95 mm; but none of the southern British linchpins with bronze terminals was fitted to an axle that was greater than 56 mm in diameter. It is of interest that all the northern British specimens have longer iron shanks, falling within the range 60 to about 82 mm, and that these figures compare closely with "maximum" axle-measurements derived from certain pre-Roman finds on the Continent. (These figures are tabulated in Appendix I.) It may be noted that the measurements derived not only from the naves of pre-Roman date from Glastonbury and Holme Pierrepont, but also from the naves of Roman date from Bar Hill, Newstead and Ryton, are considerably greater than the measurements given by the southern British linchpins



with bronze terminals. Although a small allowance (unlikely to have been more than about 5 mm) must be made for the fact that the naves are slotted onto axles, the discrepancy between the two sets of measurements is not perhaps fortuitous.

The diameters of the noses of the naves have an important bearing on this question. As can be seen from the measurements tabulated in Appendix II, the nose-diameters of the wooden naves that have been preserved are consistently greater than the internal diameters of the bronze nave-bonds (and some of the iron ones too) from England and Wales. Since there is such a remarkable consistency about these two series of measurements, it seems probable that the vehicles, to which the surviving wheels and naves were attached, were more massive than those to which the linchpins with bronze terminals and the bronze nave-bonds were attached. In view of the care with which some of the linchpin-terminals and nave-bonds were ornamented, it seems reasonable to suggest that the lighter vehicles were chariots and that the others were ordinary carts or wagons.

With the exception of the doubtful No. 118, all the southern British pre-Roman Iron Age linchpins have shanks of square or rectangular section. The slots cut for them in the axles would presumably have been of similar section. Furthermore, with the exception once more of No. 118, each linchpin has a transverse hole through it near the top. It is probable that a thong or cord was threaded through

this hole and tied round the axle as an extra precaution against the linchpin jumping out of its slot when the vehicle was moving.

A useful insight into the construction of chariots is indicated by the Owslebury linchpin (No. 113). As is noted in the Catalogue, the wear-facets on the terminals indicate that the pin was turned through an angle of about  $170^{\circ}$  after a considerable amount of use; No. 117, too, was turned round at some stage, for there is a wear-facet at an angle of about  $164^{\circ}$  to the flat back of the terminal. It seems likely that the facet with the more deeply biting wear-facets on No. 113 indicates the first phase of use, for in the 'second phase' the pin was set slightly askew. The fact that there is a deeper facet on the lower terminal than on the upper facet in the 'first phase' can only be explained by suggesting that the nose of the nave and the long axis of the linchpin subtended a small angle, the wheel sloping slightly inwards in relation to the pin. Now, this implies that the axle of the chariot was parallel with the surface of the ground and that the wheel had worked slightly loose, probably because the axle had been worn thinner through extensive use. The slightly skew setting of the pin in its 'second phase' of use might have partly countered this effect. Now, it is improbable that the axle pointed slightly downwards, as was standard practice in wagon-design in Britain in recent times (Sturt 1923: 135-6), since, once the axle had been worn thinner, the tendency would have been for the wheel to have sloped even further outwards and for the angle between it and the pin to

have been subtended by the upper rather than the lower terminal. Although it has always been assumed that the axle of the British pre-Roman chariot was horizontal, a reasonable assumption, when it is recalled that all the ancient vehicles from outside Britain have horizontal axles, it has never hitherto been possible to demonstrate this.

#### 4. 'Horn-caps' (Nos 119-35)

##### 4.1. Introduction

At least seventeen specimens, both complete and fragmentary, of the heavy bronze castings once known as 'axle-ends' but now known as 'horn-caps' have been found in southern Britain. Whilst one (No. 131) has been found in Wales, the primary distribution is southern English, ranging from Dorset to the Midlands and East Anglia (Map 10). Since none has yet been found in northern England or in Scotland, it would seem that these objects are an exclusively southern British phenomenon; possible parallels from the European mainland are discussed below (section 4.3).

Each complete horn-cap has a relatively narrow hollow shaft of circular section, that expands into a collar at either end. The upper end is invariably of greater diameter than the lower, and is also of greater size than the length of the whole piece. With the possible exception of No. 126, the upper end of each horn-cap is, or was, closed off; the lower end is always open, which indicates that these objects once served as decorative terminals. Each horn-cap is of perfectly circular section throughout, which suggests that the models, around which the casting-moulds were invested, were turned on lathes. While Nos 120 and 133 are one-piece castings (although the latter has a separately made wrought bronze dome for closing the opening at the upper end), all the others are made up of two or three separately formed pieces that have been more or less

tightly fitted together.

#### 4.2. Classification

Classification of the horn-caps is difficult. C. Fox (1945b: 15-6) has argued that two parallel typological series can be distinguished; in the first part of this section Fox's scheme will be closely examined to see if it can be sustained. In the second part of this section, some indication is given of the attributes of the horn-caps, that must be taken into consideration if any satisfactory scheme of classification is to be advanced.

##### 4.2.1. A critical review of Fox's typology

In discussing the horn-cap found in the Llyn Cerrig Bach deposit (No. 131), C. Fox (1945b: 15-6, Fig. 3.D) distinguished two chronologically parallel typological series of horn-caps: those with open upper ends (Series A), and those with closed upper ends (Series B). Series A was divided into two types (I and II), Series B into three (I, II, and III).

Despite the fact that no more horn-caps have been discovered since then, only eleven horn-caps (including No. 131) were known to Fox. Following other scholars, he considered Nos 124-5 to have been the same as Nos. 126-7; he was unaware of the existence of No. 128, even though it had been mentioned in print on more than one occasion. The true character of Nos 121 and 135 has remained unrecognised until the present study. In writing the Interim Report on the Llyn Cerrig Bach deposit and in creating the typologies for the

horn-caps, No. 134 had not been drawn to his attention, and he had not seen Nos. 122-3.

The only published illustration of No. 122 was puzzling, and Fox (1945b: 16) hesitated to include it within the same category as No. 133. He (1945b: 58) observed that No. 122 had been "recorded as identical with" No. 133, and suggested that it had been either made in the "same factory" or identified incorrectly; as he (1947a: 77) later discovered, the latter view was correct, for the illustration alleged to have been of No. 122 was in fact of No. 133. The typological status of No. 122 was reconsidered (C. Fox 1947a: 77, Note 1), but either he misunderstood the drawing of the piece, that was shown to him by C. F. C. Hawkes, or the drawing itself was inaccurate, for Fox (Ibid.) was led to believe that No. 122 was "truncated cone-shaped" and thus similar to the chained boss from the Newnham Croft burial (V. C. H. Cambridgeshire. 1 (1938): Fig. 26e); he concluded that "We appear to have an East Anglian type, divergent from the Llyn Cerrig series". However, there is no doubt that No. 122 is incomplete (that is, that the lower collar is missing), that it is closed at the wider end and not at the narrower, and that it was never originally provided with chains for attachment at the wider end; in all these respects, it differs from the Newnham Croft boss.

Fox (1945b: 15) claimed that "Exact information bearing on half the number" of horn-caps was available to him in 1944, and that "some record (had) been published of all but one"; the unpublished

data had been culled from other archaeologists. It is not clear precisely how many of the horn-caps he had seen either by 1944 or by 1946. In 1944, Fox (1945b: 3) was unable to consult "much of the comparative material and relevant literature" owing to war-time circumstances. However, it is clear that he did not have the opportunity to rectify this situation by 1946, for there are only minor differences in the data bearing on horn-caps between the two editions of the Llyn Cerrig Bach report. Nevertheless, he does appear to have seen No. 123 within this period. It is unfortunate that he was unable to examine all the pieces known to him by 1946, for, had he done so, he would have discovered that the information given to him was of uneven quality, and that it was not always correct. The inadequacy of Fox's data is crucial, for it directly affects his classification.

He also seems to have been confused by the information that he did have; for example, the incompleteness of No. 119 is indicated by the "set-off for (a) closing plate or stud" at its upper end. Nevertheless, Fox (1945b: 16) included the piece in his Series A, that is, in the group of horn-caps that had always been open at the upper end. Included in the same series was No. 126, but it is by no means certain that the upper end of the shaft has always been open. No other horn-cap of this form can be demonstrated with certainty to have had an open upper end as an integral feature of its design; it is quite possible that the upper end of No. 126 was originally closed

with a disc of the kind to be seen, for example, on No. 132.

Thus of Fox's Series A only one specimen (No. 133) could be considered to have been always open at the upper end; however despite the uniqueness of the manner of closing, even this piece was originally closed, as the separately made wrought bronze dome indicates. On the available evidence, none of the specimens overlooked by Fox could be claimed with certainty to have had open tops.

Within Fox's Series B, type I was defined by horn-caps with a "flanged cornice of slight projection" and with a "shallow concave diaphragm closing top which is decorated" (C. Fox 1945b: 16); type II differed in having "cornices and tori wider and pointed" and flat diaphragms (Ibid.). Type III was distinguished from II because it had been "cast in two pieces", and because the "flat diaphragm has a central 'cup'" (Ibid.). Type I comprised Nos 120 and 131, type II Nos 127, 130 and 132, while type III was represented solely by No. 129. Nos 123 and 134 were later added to the list of type II horn-caps (C. Fox 1947a: 17). It should also be noted that the definition of the type was slightly, but significantly altered; in place of the statement that the diaphragms were flat, we read that the "diaphragms (are) generally flat" (Ibid.). This modification was doubtless intended to accommodate the slightly domed profile of No. 123. It was also noted that No. 123 had a central 'cup',; hitherto considered to be one of the two features that distinguished the sole specimen of type III from the horn-caps of type II. But



Fox's description of No. 129 was incorrect; for this he was not to blame, for the information was passed to him by F. Cottrill (C. Fox 1945b: 15, n. 2; 1947a: 17, no. 1). No. 129 is in fact of three-, not two-piece construction. Unknown to Fox, No. 129 is not the only horn-cap of his Series B that is of multi-piece construction; in fact, all four of the extant specimens of his type II (Nos 123, 127, 130 and 132) are composite pieces. No. 128, the horn-cap that was not known to Fox, could equally well be assigned to this same group, for it is not only of multi-piece construction, but it also has a wide torus as well as a central cup; although differing in detail from No. 128, the same characteristics appear on No. 122, the horn-cap whose true nature, as was demonstrated above, was misconstrued by Fox.

In view of these inconsistencies, it is clear that Fox's taxonomy must be rejected. One final point must be considered, that is, the chronological aspect of Fox's scheme. As has been pointed out above, the two series of horn-caps, A and B, were considered to have been parallel in time. The starting-point for Series B was provided by the alleged similarity of Nos 120 and 131 to the horn-terminals from the Waldalgesheim burial (Fox 1945b: 15, Fig. 3.II), and by the alleged affinities of the ornament on No. 120 with the continental 'Waldalgesheim Style' (Ibid.: 16). In the argument presented below in section 4.3, I question this alleged similarity of design and function and conclude that there is little reason for regarding the comparison as valid; the same conclusion has been reached by Stead

(1965b: 262). Furthermore, the view that the ornament on No. 120 is closely related to the loosely defined 'Waldalgesheim Style' has also been challenged (Jope 1961b: 78).

The alleged succession from types I to II within Series B was supported by the date of "c. 25-45 A.D." assigned to the context of the type II horn-cap No. 132 by Wheeler (1943: 274). However, it is difficult to establish the reasoning by which this date was arrived, for the stratigraphic information that is given by Wheeler is insufficiently precise, as Grimes (1945: 7-9) has pointed out. The dating of the later phases at Maiden Castle has since been revised (Frere 1961: 88-90), although no account was taken of the imperfections of the excavation report; furthermore, as will be indicated below in the chronological analysis, it is doubtful whether the assumptions upon which the chronologies of Maiden Castle have been founded, can be accepted.

The argument presented by C. Fox (1945b: 16-9; 1947a: 17-9) for dating No. 131 to the close of the first century B.C. was based on two assumptions: first, that the similarity of the swastika-motifs on Nos 131 and 305 permitted one to transfer the assumed date of the latter to the former, and, second, that No. 305 could be dated with certainty to the close of the first century B.C. Even if the first assumption is accepted, it is doubtful whether the second can be maintained, for it does not seem to be possible to narrow down so precisely the date of manufacture of No. 305.

In sum, therefore, there does not seem to be any satisfactory basis for accepting not only Fox's taxonomy but also his typology.

#### 4.2.2. Towards a new classification

I do not believe that the data are such as to provide adequate evidence for a satisfactory classification of the horn-caps, for, of the seventeen specimens that have been discovered, only six (Nos 120, 123, 129 and 131-3) survive intact. While three more (Nos 124-5 and 134) appear to have been more or less intact at the time of discovery, they have since been lost and are now only known from drawings that are insufficiently precise for critical analysis. Although Nos 119 and 126 lack only the closing discs at the upper ends of their shafts, and although Nos 122 and 128 lack only their lower collars, the inadequacy of the data for satisfactory analysis cannot be underemphasised.

The complexity of design of each horn-cap is great. In view of the incompleteness of so many of the horn-caps, a classification based on only one or two attributes of each specimen might be satisfactory, but only if the same part of each horn-cap were preserved on all the specimens included in the classification. For example, one might follow C. Fox and use as a taxonomic criterion the relative protrusion of the torus beyond the ridges above and below the upper collar; fourteen of the seventeen recorded horn-caps preserve this feature. The horn-caps could then be divided into two main groups: I - those with relatively stubby tori (Nos 119-20, 131

and 133); II - those with pronounced tori (Nos 122-30 and 132).

It might be considered significant that, with the exception of No. 131, Group I had a restricted distribution confined to the lower Thames basin; the location of No. 131 could be explained by the fact that it is in any case a geographical outlier to the principal concentrations of all known horn-caps. It would be improper to include the form of the closing diaphragm in any such classification, for, of the fourteen horn-caps whose upper ends are preserved, only nine are known to have retained this feature intact on discovery. However attractive, one could not validly argue that horn-caps with ornamented diaphragms are only found in Group I, nor that horn-caps with cups set in the centres of diaphragms are not found in this group, despite the apparent restricted distributions of these features, for one could not at present exclude the possibility of these correlations being anything more than coincidence.

The difficulty of classification is compounded by the varying proportions of the horn-caps. I have plotted some of the proportions on a series of diagrams on Fig. 212; I also indicate on these diagrams certain other attributes of the horn-caps. At least one conclusion can be drawn; there does not appear at present to be any significant consistent correlation between the kinds of attributes chosen by Fox and the proportions of the extant specimens.

#### 4.3. The function of horn-caps.

The identification of the original function of these enigmatic pieces has

received a great deal of attention from archaeologists, doubtless because none has been found in direct structural association with any other object.

Until the discovery and analysis of the deposit from Llyn Cerrig Bach they were considered to have been mounted on the ends of the axles of chariots (cf. R.A. Smith 1920: 22), but, following Jacobsthal, C. Fox (1945b: 15, Fig. 8.II) compared them with the terminals on the ends of the bronze horns from the La Tène B cart-burial at Waldalgesheim (Jacobsthal 1944: no. 156a), and considered them to have been mounted on some kind of object. The horn-caps and the Waldalgesheim terminals were further compared with apparently similar objects on the Dejbjerg and other vehicles, and, following Jacobsthal (1944: 121), were thus considered to have served as hand-holds on the sides of chariots (C. Fox 1945b: 15; 1947a: 27, Fig. 13).

More recently, Mariën (1961: 174, Fig. 66.1) has stated that the Waldalgesheim horns were in fact attached to the ends of a yoke, but Stead (1965b: 262) has since pointed out that "there is no plan to show where the Waldalgesheim horns were found in relation to the cart". Mariën (1961: 176) argued that the provision of such horns at the ends of the yoke served "à empêcher que les rênes ne puissent glisser à terre", an explanation taken up by Lynch (1970: 265). Mariën (Ibid.), followed by Piggott (1969: 380), argued that the La Bouvandeau horn and openwork mounts (Jacobsthal 1944: nos 168 and 171) had also been

mounted on a yoke, despite the excavator's clear statement that their position in the grave left no room for doubt that they had been mounted onto the end of the pole of the cart (Flouest 1885; Stead 1965b: 262); both Jacobsthal (1944: 121) and C. Fox (1945b: 15) presumed that the La Bouvandeau horn had served the same purpose as the Waldalgesheim horns. Jacobsthal and Fox (loc. cit.) also considered that the bronze horn-fragment from the Kappel hoard had once been mounted on a vehicle, while Radnóti (1964: 311) has somewhat unconvincingly argued that the fragment was once attached to one end of a yoke; however, Fischer (1959: 21-2, Taf. 2 and 25.1) and Piggott (1959b: 22-3, Pl. Xa) have independently demonstrated that the fragment is more likely to have been part of a carnyx. As a result of Marién's re-interpretation of the function of the La Bouvandeau and Waldalgesheim horns, Piggott (1969: 380) has argued that the British horn-caps must therefore have been attached to the ends of yokes.

However, Stead (1965b: 262) has rightly pointed out that the similarity between the British and the continental pieces "is not particularly close", and that "the British (horn-caps), if they belonged to a chariot, could have decorated more or less any part of it", a judgement with which I wholly agree. Like C. Fox (1945b: 15), Stead (1965b: 265, n. 23) cited the context of the horn-cap from Maiden Castle (No. 132) as indicating that the British horn-caps belonged to vehicles; Stead pointed out that it "seems to be the only

example definitely in the context of a cart". In view of the importance of this find for establishing the function of our 'horn-caps', it is worth reconsidering in detail. According to the excavator (Wheeler 1943: 274), the horn-cap was "found together in association" with five or six iron rings (Ibid.: Pl. XXIX.B) and "a large quantity of fragments of iron and bronze and incomplete leg-bones of a pony". The "fragments of iron and bronze" were neither illustrated nor described, but of the iron rings Wheeler wrote (1943: 274-5):

"2 and 6. Heavy iron trace-rings or pole rings(?). Such rings were found in position in the La Gorge Meillet (Marne) chariot-burial. On the other than, no. 2 at any rate, with its characteristic point of maximum wear, may have been a large bit ring.

"3-5 and 7. Iron terminal rings of bridle-bits with adhering fragments of links. No. 3 is unusually heavy for this purpose, but is comparable in this respect with bit-rings from the Beverley chariot-burial, Yorks."

I have quoted this passage in full, since Wheeler concluded that the assemblage "apparently represents horse-gear and some of the fittings of a wagon or chariot" (Ibid.: 274), and since it represents the sum total of the evidence for considering the British horn-caps to have been fitted to chariots. Whilst three of the iron rings (Nos 4, 5 and 7) could have been bit-rings, the other four are considerably larger than any other pre-Roman Iron Age bit-rings yet discovered. Moreover, there is no internal evidence that any of these rings were in fact bit-rings; in fact, the fragmentary iron "links" adhering to all three of the smaller rings and to one of the larger ones (No. 3) are as equally characteristic of the staples that held the iron ring-handles of wooden

vessels known from pre-Roman Iron Age contexts elsewhere (cf. Stead 1967: Fig. 22. 3, 4) than of the ends of bit-links. In view of this and since ring no. 4 was not even certainly part of this assemblage, the only evidence for considering the assemblage to have represented "horse-gear and some of the fittings of a wagon or chariot" are the two rings nos 5 and 7 and the "incomplete leg-bones of a pony". This cannot really be considered as adequate evidence for interpreting our horn-caps as chariot- or cart-fittings.

It can only be concluded that there is absolutely no evidence of any value for identifying the original function of the British horn-caps.



### 5. 'Baluster ferrules': Nos 136-9

At least fourteen hollow cast bronze ferrules, each waisted in the middle, wider at one end than the other, and provided with ornamental ridges around it, have been found in southern Britain, all of them in East Anglia. All of them, happily, have contexts which suggest that they were current at the time of the Roman Conquest. One of the pair in the Santon hoard (No. 138B) is unfinished and provides a useful insight into the way that at least one of these objects was made.

The original function of the ferrules is unclear. Ward Perkins (1940: 358-9, 365-6) considered them to have been linchpin-heads on analogy with the linchpin-heads of his "Yorkshire" type (my group III, q.v. Chapter 3.2.3), a view shared by C. Fox (1947a: 20, 79) and by Hawkes and Hull (1947: 332). However, since most of the ferrules are open at both ends and since none has a transverse horizontal perforation in the lower section, it is clear that this view is untenable. Although three of them (Nos 136B, 137C and 139F) are closed at the narrower end and must therefore have served as terminals, all the others are open at both ends and must therefore have been mounted onto other objects. The invariably square opening at the narrower end and the presence of the stumps of iron shanks of square section in Nos 137C, and 139D, E and F, suggest that they were mounted on iron hafts. Since the opening at the wider end is, with one exception (No. 137C), invariably circular and of greater diameter than the square-sectioned pins that the ferrules contained, it seems likely that some kind of mount of circular section was threaded

onto the iron shank, and inserted into the wider end of the ferrule.

Somewhat similar objects have been found in Roman contexts at Brough-on-Humber (Wacher 1969: 87, Fig. 37.6), Chester (Thompson and Tobias 1957: 36, no. 16, Fig. 4.16), Lincoln (Webster 1949: 59, no. 12, Fig. 4.8), and Wroxeter (Bushe-Fox 1916: 33, Pl. XXI. Fig. 2. Nos 7 and 8). Their function is also unknown.

## 6. Nave-bonds (Nos 140-8)

Several nave-bonds have come to light in southern Britain, some of bronze, some of iron. The northern British examples have lately been discussed by MacGregor (1962: 33) and Stead (1965a: 31-2) who also considered French La Tène nave-bonds. In discussing the Llyn Cerrig Bach specimens, C. Fox (1947a: 76-7) mentioned some of the other southern British ones.

Both plain and ornamental forms are represented in southern Britain. Nos 144 and 147 are of simple section, but slightly thickened at the edges; the thickening is probably of technological rather than taxonomic significance, and would have arisen from hammering out the metal from narrow thick rings of cast bronze. No. 147 is one of three plain examples in the Santon hoard which also contained fragments of at least three of iron (C.U.M.A.E.: 1897. 228), as well as two others of bronze; the latter are embellished with simple ornament (Nos 145-6).

All of the bonds listed in the Catalogue, with the exception of Nos 144 and 147, are ornamented with raised cordons. Nos 142 and 145 have single cordons, Nos 140-1, 143, 146 and 148 two cordons. The double-cordoned form does not appear to occur either in northern Britain or on the Continent, but those with single cordons are paralleled in both Yorkshire and France (Stead 1965a: Fig. 14.2 and 10). As Corcoran (1956: 49) has noted, the single-cordoned bond from Llyn Cerrig Bach (No. 142) is very similar to the three bronze hoops around

the Pentuan tankard (No. 370); it may, therefore, have been attached to a tankard rather than to the nave of a wheel, although it is impossible to be certain. Tratman (cited in Corcoran 1956: 49) has suggested that the four bonds from Read's Cavern (No. 148) may also have once belonged to a wooden tankard, on analogy with the hoops around No. 370. Both interpretations of the original function of the Read's Cavern hoops were discussed by Corcoran (1956: 49-50) who was unable to find conclusive evidence to support or reject either hypothesis. He did, however, note that the four hoops are really two pairs, since two of them are of much thicker metal than the others; this could be taken as evidence that they were attached to a pair of wheels, two for each wheel.

The Llyn Cerrig Bach deposit included an iron ring of plano-convex section that C. Fox (1947a: no. 39) suggested was fitted on the inside of a nave. Lynch (1970: 259) has recently argued that larger examples of this kind of ring would have been used as iron strengtheners underneath the cordons of Nos 140-3; bronze bonds with iron rings underneath the cordons have been found at Arras (Stead 1965a: Fig. 41.1). However, there is not enough evidence to decide which of the two hypotheses is correct.

Certain other rings, from Hunsbury (Fell 1937: 67, no. 16, Pl. IV. B. 5), have also been claimed as nave-bonds. However, although plain rings of narrow section were used as nave-bonds on

wheels in some of the Yorkshire cart-burials (Stead 1965a: Fig. 14.4 and 9), one cannot be certain that the Hunsbury rings were nave-bonds, since other simple rings of this character were used as ring-handles (Stead 1967: Fig. 22.3-4). Nevertheless, at c. 126 mm, their internal diameters accord well with the range of internal diameters of certain nave-bonds in pre-Roman Iron Age Britain. The range of internal diameters (see Appendix II) is from 122 to c. 157 mm. It is interesting that the diameters of surviving naves of pre-Roman Iron Age and Roman date in Britain fall within a very similar range, that is, from 135 to 160 mm (see Appendix II). Just as smaller and larger groups of axle-sizes may be distinguished (cf. Chapter 3.3), the naves of the surviving wheels are consistently larger than the bronze nave-bonds. Some of the iron nave-bonds, however, fall within the range of the surviving naves. I have already suggested (Chapter 3.3) that the slighter wheels were attached to chariots and the heavier to ordinary carts or wagons.

## 7. Bridle-bits (Nos 149-84)

### 7.1. Introduction

The bridle-bits of the British pre-Roman Iron Age have been the subject of several studies of which those by Leeds (1933a: 113-8) and Ward Perkins (1939) are still fundamental. Six groups of bits may be defined: I - bits with three links and two side-rings; II - bits derived from Group I, in which the side-links have been partly incorporated into the side-rings, and in which the central link has been lengthened to compensate for the absorption of the side-links; III - bits with two links and two side-rings; IV - as Group II, but with two links in place of the central link; V - bits with an unjointed mouthpiece set between the two side-rings; VI - this form is represented only by its rein-hooks; the form of the mouthpiece is unknown. While Groups I, II, III, IV and VI are represented by bronze as well as iron specimens, only iron examples of Group V have been found in southern Britain (e.g. C. Fox 1947a: no. 128); the latter are thus excluded from the following discussion.

### 7.2. Group I: Three-link bits (Nos 149-63)

#### 7.2.1. Previous studies and general definition

Partly as a result of more frequent discoveries, more attention has been paid to three-link bits since Ward Perkins' fundamental study than to other forms. In discussing the specimens from Llyn Cerrig Bach, C. Fox (1947a: 27-34) distinguished between the British and Irish series, divided the former into two main 'phases', and proposed

a typology to account for the several forms of side-links. Later, R.R. Clarke (1951b: 219) proposed a further division of the three-link bits, based on the forms of the central mouldings on the central links. More recently, these schemes have been criticised by Barber and Megaw (1963), and, more trenchantly, by Stead (1965a: 37-42). In the absence of useful relative and absolute external chronology derived from associations with other objects, many of these schemes can be neither substantiated nor disproved. However, some of the variations in form may well be due to cultural preference rather than to difference in date.

Three-link bits consist essentially of five elements: two side-rings, two side-links, and a central link. Some of the bits were made completely of either iron or bronze, but many were made of both metals. For the latter, the iron is generally confined to the side-rings which are invariably sheathed in bronze sheeting, apart from two incomplete bits from Llyn Cerrig Bach (C. Fox 1947a: nos 47-9) and a bit from Strand-on-the-Green (Barber and Megaw 1963: 211, fn. 7; L.M.: 0.1761), which have iron links. As they survive today, some of the bits now have tubular sheet bronze side-rings, the iron cores having disappeared due to preferential corrosion. As a result of the butt-join inherent in the forging of an iron ring, some of these part-bronze, part-iron side-rings were provided with stops set close to the butt-join on either side of the head of the link to prevent the rings from swivelling round.

#### 7.2.2. Bits of eastern English tradition

A small group of these bits, Nos 159-61 and those from the Arras 1 and 28

cart-burials (Stead 1965a: 89, 91), had their side-links cast-on to the side-rings which obviated the need for stops, even though they were retained on all but one of these bits (No. 160). Only two bits are totally of bronze: Hunmanby, East Riding (Stead 1965b: 94, Fig. 18.2), and Old Windsor (No. 158); on both, the side-rings are cast-in-one with the side-links. The former bit does not have stops on the rings, but the latter has a pair of decorative studs on each ring spaced some distance away from the head of the side-link and presumably derived from the functional stops seen on the part-bronze, part-iron side-rings of other bits. On structural grounds it is clear that bits with part-bronze, part-iron rings that move freely up and down in the heads of the side-links are likely to be initially earlier than those with part-bronze, part-iron rings that are fixed in one position by the casting-on of the side-links; the latter are in turn likely to have been initially earlier than the forms represented by the Hunmanby bit and Nos 158 and 160.

However, it is clear that such a sequence has only a regional validity, for the casting of the links onto or in one piece with the side-rings is only found on bits that have been discovered in eastern England, from Yorkshire in the north to the Thames in the south. The primary concentration is in fact in Yorkshire, Lincolnshire and Norfolk (i. e. Arras 1 and 28, Hunmanby, and Nos 159-61), No. 158, from the bed of the Thames at Old Windsor, being an outlier. It is, therefore, of interest to note that the bits with a very pronounced double-ridged moulding on the central link are restricted to this group (namely Nos 160-1, Arras 1 and 28, and Hunmanby); the



bit from Old Windsor has a very pronounced single-ridge moulding. The relatively slighter mouldings on the central links of the Ringstead bits are, however, better paralleled on those from Hengistbury Head and Walthamstow (Nos 152 and 162). The head of one of the side-links of the Hengistbury bit, like the Ringstead and Ulceby bits, is embellished with ornament in the 'Ulceby-Snettisham' style whose primary distribution is eastern English. Hengistbury Head has also yielded part of a ring-terminal torc (R.R. Clarke 1954: Pl. XVII), a type that is at present only elsewhere found in England in north-west Norfolk (*Ibid.*: 63-4; Brailsford 1971). The Hengistbury terminal has the small spherical bosses with three punch marks that Brailsford (1971: 17, 18, Table, Pl. VIII) has observed on the Sedgeford, Shaw Hill ('Cairnmuir'), and Snettisham torc-terminals (*Ibid.*: Pl. VII); the hatching on all four of these terminals is executed in exactly the same manner with stout round-ended punches. These details suggest that all four torcs and torc-terminals were products of the same workshop-tradition. Since Hengistbury Head appears to have been a major entrepôt<sup>A</sup> in the late pre-Roman Iron Age (Collis 1971a: 81), it seems very likely that both the torc-terminal and the three-link bit from the site were either imported from, or were made by a smith or smiths who had once worked in east Anglian workshops. It is of further interest, in this connection, that the Group IIa terret from Mill Plain, Christchurch (No. 25), which is only a couple of miles from Hengistbury Head, is most closely paralleled by No. 26

which was probably found in north-west Suffolk.

A further feature of bit-design is also only found on the three-link bits of eastern English tradition, namely the ornamentation of the stops on the side-rings. The basic form of these knobs is a sphere, a form that is found everywhere but in eastern England between the Humber and the Thames. However, the stops on the rings of the bits from Hengistbury Head, Old Windsor, Ringstead, Ulceby and Walthamstow (Nos 152, 158-9, 161-2) are of different forms; most of them have relief ornament. The stops on the Hengistbury Head, Ulceby and Walthamstow side-rings are particularly close to one another, since each is in the form of a short cylinder divided into two segments by a groove.

### 7.2.3. Previous typologies and bits of western British tradition

In his analysis of the forms of the side-links of three-link bits, C Fox (1947a: 31-1, Fig. 15) considered that the forms could be arranged in an "evolutionary sequence" starting with the "streamlined" design, characterised by the Arras bits, and finishing with the Llyn Cerrig Bach bits nos 49-51 (nos 50 and 51 = respectively my Nos 153 and 154). Some of the forms found at Llyn Cerrig Bach (Fox's nos 47-51) were also represented elsewhere, that is, in south-western England at Bredon Hill, Glastonbury, and Ham Hill; a further form, found at Bredon Hill (Fox's 'Bredon 3'), is now matched at Meare (Gray and Bulleid 1953: 243, Pl. LI. I 44). However, Stead (1965a: 41-2) has questioned the validity of this sequence, and has suggested that, since one of the more 'developed' forms (C. Fox 1947a: nos 47-8) stands closest to the presumed French prototype, namely

the bit from the Somme-Tourbe cart-burial (Stead 1965a: Fig. 23), the sequence "Arras" to "Llyn Cerrig Bach nos 46-9" should be reversed. Stead also argued that "it seems more reasonable to regard" the latter "as survivals of an earlier type from which the Arras bit developed rather than a late development of the Arras type which happened to revert to the prototype form"; the Somme-Tourbe bit is of fifth-century B.C. date and thus considerably earlier than the presumed date of the similar British bits.

But both C. Fox and Stead have missed an important point, that the former's 'developed' forms have only been found in south-western England and at Llyn Cerrig Bach. In view of the 'eastern' three-link bit series noted above, it seems very probable that these 'developed' forms are the product of a western British tradition. Since Llyn Cerrig Bach nos 49-51 cannot be paralleled elsewhere in Britain, it cannot be argued that they were imported into Anglesey from south-western England (C. Fox 1947a: 31); Haworth (1969: Fig. 29, ENG 2) has drawn attention to an unprovenanced bit in the National Museum of Ireland (Dawson Collection: W 60), that is very similar to Fox's No. 51 from Llyn Cerrig Bach (my No. 154). Since the "streamlined" (Arras) link-form has been found throughout the area of distribution of three-link bits in England, it is clear that this was a national, rather than regional form. Since there are regional variants based on this form, it would seem to have been, at

least initially, the earliest in date. Since it is so different from the presumed prototype of all the British (and, incidentally, the Irish) three-link bits, since, moreover, the only other form of three-link bit found in a Yorkshire cart-burial (Stead 1965a: Fig. 19) cannot be paralleled in France either, and since there appears to be a marked chronological disparity between all of the British three-link bit and the presumed prototype from Somme-Tourbe, it seems doubtful whether the latter had anything at all to do with the development of the British three-link bits. Furthermore, since the holes at both ends of the Somme-Tourbe side-links are in the same plane, a feature that never occurs on any British bit (C. Fox 1947a: 33), it seems no more than a coincidence that the Somme-Tourbe bit is of three-link form; it would seem that its makers can have had no influence at all on the development of the British form.

One final point may be considered. C. Fox (1947a: 30, 82) divided the bits with "streamlined" links into two chronologically successive groups: the first was characterised by bits of "iron, sometimes bronzed or tinned", the second by bits of "cast bronze, wholly or in part". The iron ones were regarded as earlier, because the Arras examples were supposed to have been earlier in date than the others, and because they were supposed to have been made by "the craftsmen of the Marnian Iron Age B invaders" who were alleged to have been buried in the Yorkshire cart-burials. However, owing to the paucity of good evidence for the absolute dating of the Yorkshire

cart-burials (Stead 1965a: 81-4), it cannot be argued that the Arras bits were necessarily made at an earlier date than any of the other "streamlined" bits from elsewhere in England. In any case, C. Fox's identification of the materials of which these bits were made was incorrect, for the links of the bits from the Arras 1 and 28 cart-burials are in fact of cast bronze; furthermore, the other bits from Arras, from the 'Charioteer's Barrow' (Arras 2), have not survived, "but Stillingfleet implies that they were not the normal 3-link type" (Stead 1965a: 90). As to the other Phase I bits with "streamlined" links from cart-burials in Yorkshire listed by C. Fox (1947a: 82), the precise form of the Beverley links is difficult to ascertain (cf. Stead 1965a: 91), while of the pair from Danes Graves 43, only fragments of one bit have survived, which "appears to have been similar to Pexton Moor" (Ibid.: 93). The fragments of a bit from a cart-burial at Cawthorn Camps, not mentioned by C. Fox, also appear to be similar to the Pexton Moor bit (Ibid.: 92). In conclusion, therefore, it would appear that there is no good reason for arguing that the materials of which the "streamlined" bits were made has any general bearing on their respective dates. Nevertheless there is reason to believe that the totally bronze examples from Hunmanby and Old Windsor (No. 158) are at least typologically later than the part-iron, part-cast bronze main series of three-link bits in eastern England.

#### 7.2.4. Three-link bit of 'Irish' form from Llyn Cerrig Bach

Although not listed in my Catalogue, the incomplete bronze three-link bit No. 55 from the Llyn Cerrig Bach deposit (C. Fox 1947a: 28-9, 33-4, 81, Pls VIII and XXV, No. 51) deserves consideration here, for it is the only bit of 'Irish' form that has certainly been discovered in Britain. Another incomplete three-link bit of 'Irish' form is alleged to have been found at Tenbury Wells, Worcestershire, but is more probably a nineteenth century export from Ireland (Haworth 1969: D 24).

As Fox (1947a: 33-4) pointed out, the Llyn Cerrig Bach bit differs from all other British three-link bits in having the two perforations of each side-link in the same plane; this feature is characteristic of all the Irish three-link bits. Fox (Ibid.) compared the bit to Raftery's Type I, and listed all the known examples. However, Raftery's classification of the Irish bits has since been replaced by one devised by Haworth (1969); the Llyn Cerrig Bach bit is one of only three specimens of Haworth's Type A. In view of this, it may be wondered whether the Llyn Cerrig Bach bit really was imported from Ireland (Fox 1947a: 34); like the fragmentary 'Irish' trumpet from the same deposit (Ibid.: 44-5, 86-7, Pls. XII and XXXI, No. 74), it could equally be argued that the bit was in fact made in Anglesey. It is not improbable that Anglesey should have received 'cultural stimuli' from Ireland as well as from other parts of the British Isles. The available evidence does not, however,

enable us to decide which of these models is correct.

7.3. Group II: "Derivative-three-link" bits (Nos 164-6)

7.3.1. Definition

This kind of bit has a long unjointed mouthpiece linked at either end to loops projecting from and cast-in-one with the side-rings. Each side-ring is of plano-convex section for at least part of its circuit, and is differently ornamented, one more elaborately than the other, a circumstance that led Leeds to infer (1933a: 115) that the bits were made in pairs, the more elaborately ornamented ring of each bit being intended to be seen on the outer sides of a pair of chariot-ponies. Parts of three such bits have been found in southern Britain; complete specimens are as yet only known from northern Britain. A list of all the known specimens is provided by Simpson (1966: 104-5), revising the one published by Ward Perkins (1939: 183).

7.3.2. Analysis

Two incomplete rings from the Seven Sisters hoard have different ornament, one (No. 166B) more elaborate than the other (No. 166A); the former has two roundels linked by an S-scroll, the latter one roundel. No. 166B compares closely in its decorative content with the pair of concealed-bar strap-unions from the same hoard (No. 212); together they presumably formed part of the same set of harness for a pair of chariot-ponies. There seems little doubt that Nos 166A and B formed part of the same bit.

The side-ring from Leicester (No. 164) also encloses a pair of ornamental roundels, an arrangement that is seen not only on No. 166B but also on the side-rings of bits found near the Roman fort at Birrens ("Middlebie"), Dumfriesshire (Childe 1935: 230, Pl. XV), from Rise, East Riding (Brailsford 1953: 60, Pl. X.3), and the 'Stanwick' hoard (MacGregor 1962: Fig. 3.C and D); in each case the other side-ring of each bit encloses only one ornamental roundel. The other ring of the Leicester bit would therefore presumably have originally enclosed but one similar roundel, and not two as Blank's recent reconstruction implies (1970: Ill. 11).

With its internal cross-struts the Saham Toney ring (No. 165) is unique, although its square and triangular insets for champlevé enamel link it stylistically with the other objects in the same hoard (Nos 91-4 and 209), and with the Seven Sisters rings.

### 7.3.3. Function

Since the complete specimens of this kind of bit frequently have very short mouthpieces, Barber and Megaw (1963: 210) have suggested that they could not have been used and must therefore have been 'ritual' in intent. However, as has been pointed out before and since (Jope 1956a: 42; Simpson 1966: 20-41; Stevenson 1966: 42, fn. 82), they must have been used since certain examples have pronounced wear-facets; the bit from Birrenswark, for example, even had to have strengthening-strips added to its side-rings as a repair (Childe 1935: Fig. 66). As Stevenson (loc. cit.) has pointed out, it is probable that they were designed for a breed of pony that had a much slenderer head



and mouth than is found on ponies bred today. Edwards (1963: 35) has noted how radically breeding has reduced the average widths of horses' heads in this country within the last century.

#### 7.3.4. Origin of the forms and parallelism with mirror-handle design.

Since fragments of "derivative-three-link" bits occur in both the Seven Sisters and 'Stanwick' hoards, it is clear that the type must have been developed by the middle years of the first century A.D.

Precisely how long they continued to be made and used is debatable; in the north it is clear that they were still in use in Agricola's time, if not later times, since the type is represented by an unstratified find from the Roman fort at Newstead (Simpson 1966).

There seems little reason to doubt Leeds' hypothesis (1933a: 114-5) that the type was developed from bits of the three-link type, even though no gradual development can be detected in the bits that have survived. Nevertheless, the beginning of the transition presumably occurs in the three-link bits of eastern English tradition in which the side-links are cast onto or in one piece with the side-rings.

In this connection, Barber and Megaw (1963: 210) have remarked that

"the vestigial stop-knobs of the Old Windsor bit are set further away from the link-heads than the normal functional knobs. In the Rise bit we may see the culmination of this process; the vestigial stop-knobs, now square in form, are set halfway round the circumference of the rings."

Precisely when the "derivative-three-link" bits were first made in fully fledged form is a matter for debate, but it has been suggested above that this must have been by the middle of the first century A.D. The tortuous chronological arguments of Barber and Megaw (1963: 207-13) led them to conclude that the Old Windsor bit was made in the second century B.C.

However, most of the 'dates' that they used in their argument are little more than guesswork. They assume, for example, that the bits from the Yorkshire cart-burials must all have been early in the life of the three-link type, an assumption that, as we have seen, cannot be sustained. Since, typologically, the Old Windsor bit must stand at the end of the eastern three-link bit series along with the Hunmanby and Swanton Morley bits, it is clear that a second-century B.C. date for the Old Windsor bit can only be sustained if it is assumed that the whole of this typological development had taken place by then.

A further feature of some of the bits of Groups I and II has a bearing on the date at which the latter were first made: the similarity of their designs to some of the Group IV mirror-handles (q.v. Chapter 18.2.5). The manner in which the side-links have been absorbed into the side-rings of the Group II bits is matched by the treatment of Nos 335, 340, 343 and 346-7. No. 164 is closely paralleled by No. 347, while the manner in which the figure-of-eight loops are absorbed into No. 166A and the bit from Lochlee crannog (Childe 1935: Fig. 66) is similar to that on the handle of No. 340. Similarly, the 'Middlebie' Group II bit (Childe 1935: Pl. XV) has a double-disc within one of its side-rings, disposed in a manner to the 'eyes' within the terminal loop of the Holcombe mirror-handle (No. 343). The central links of such bits as No. 158 bear a strong resemblance to the pairs of pointed oval loops on the handles of such mirrors as Nos 339, 342 and 346. The only difference between them is in the arrangement of the loops; on the bit-links the points of the loops face each other, whereas on the mirror-handles they are

reversed and face outwards. Furthermore, the side-rings of No. 158 are elliptical like the terminal loops of the handles of Nos 339 and 342.

Since the contexts of the mirrors all appear to belong to the first century A.D. (Spratling 1970d: 13-4), and since, as was noted above, the Group II bits are not found in closed finds that can be dated before the middle of the first century A.D., it seems reasonable to suggest that at least some of the Group I bits, for example, No. 158, were being made at the same time as the mirrors.

#### 7.3.5. Iron versions

To conclude this discussion of "derivative-three-link" bits, it may be observed that a pair of three-piece iron objects from the Llyn Cerrig Bach deposit (C. Fox 1947a: nos 56-7) appear to be simplified versions of 'derivative-three-link' bits. Each has a pair of side-rings with projecting loops that are linked together by a waisted figure-of-eight loop. The rings are bent at an angle of  $40^{\circ}$  to the planes of their projecting loops; the apparent lack of parallels for this feature led C. Fox (1947a: 34-5) to suggest that these objects were "strap-links or harness-locks". However, on the pair of three-link bits from the Arras 28 cart-burial (B.M.P.R.B.: 1877.10-16. 10-11), the side-links were cast onto their respective side-rings at angles of about  $25^{\circ}$ . There seems little reason, therefore, for regarding the pair of objects from Llyn Cerrig Bach as anything other than a pair of bits. An analogous object from Ham Hill, to which C. Fox (1947a: 35, Fig. 18)

drew attention, was presumably also an iron rendering of a 'derivative-three-link' bit.

#### 7.4. Group III: Two-link bits (Nos 167-79)

Twenty-two two-link bits of cast bronze, some of them incomplete, have been discovered, sixteen of them in the Polden Hill hoard (Nos 171-8). These, like the fragments from Llanaber (No. 168), fall into pairs. Like the bits of other forms, it is probable that all of the bronze two-link bits were intended for use with pairs of chariot-ponies. Whilst the rings are invariably circular or near-circular and quite plain (although there is a curious kink in two of the Llanaber rings), the modelling of the links varies from the relatively plain, as at Llyn Cerrig Bach (No. 169), to the very ornate, as in the Polden Hill series. The variety seen in the latter group is of great interest, since it suggests individual modelling for different customers.

The ring-carrier of each link, except those from Llyn Cerrig Bach and Lydney (Nos 169-70), is modeled like a pair of ears, and is thus very similar to the wings on Group VI terrets (q.v. Chapter 2.2.6.) and on some of the escutcheons on bowls of Rose Ash form (q.v. Chapter 21.2.). Indeed the resemblance to the latter is so close as to have caused Shortt (1948: 25-6) to misidentify the Bilbury escutcheon (No. 384) as a fragment of a Group III bit-link.

Bronze two-link bits seem to have first appeared at a very late date in the pre-Roman Iron Age in Britain; the only closely-datable

examples occur in both the Polden Hill and Santon hoards, both of which are datable to the middle years of the first century A.D.

Ward Perkins considered the type to be of south-western origin (1939: 174-5); this was largely based on the misidentification of the three-link bit-fragments from Glastonbury and Meare as of the two-link type, a misidentification corrected by C. Fox (1947a: 33, no. 2). Nevertheless, the latter still considered the two-link bits to have been a distinctly south-western type, especially since he considered the not easily identifiable bit from Ham Hill (Hoare 1827: Pl. V) to be also of two-link type. However, this identification is far from certain; the bit cannot therefore be used in cultural arguments as good evidence. But considering ones that are of bronze and discounting the large number of bits in the Polden Hill hoard as fortuitous, it is clear that either East Anglia or north-west Wales could be regarded as the home of the type. C. Fox (1947a: 33) thought that the Llyn Cerrig Bach two-link bit (No. 169) might be "the earliest British example" and that its "plain workmanlike pattern suggests that it was produced in an area unaffected by Iron Age B artistry, possibly deep in the south-western peninsula". Like many of the objects in the deposit, C. Fox considered the piece to have been imported into Anglesey (1947a: 60); this was based on the assumption the Anglesey was "not a creative centre of art of craftsmanship".

It is of interest that the mouthpieces (i. e. the distance between

the two side-rings) on the two-link bits tend to be smaller than those of the three-link type; whereas the former range from 86 to 118 mm, the latter mostly range from 108 to 131 mm, though one (No. 162) is 150 mm. It is generally assumed that the size of the pony can be calculated from the mouthpiece-measurement (Barber and Megaw 1963: 209, 210), but in the absence of a proper sample of metrological data on the relative proportions of the several parts of the skeletons of pre-Roman equines in Britain, this assumption cannot be proved. Moreover, even with recent equines it is often unwise to postulate a one-for-one correlation of mouthpiece-size with the height of the withers (Edwards 1963: 35), for this will vary from breed to breed.

Since the two-link bit was the standard form on the continent during the pre-Roman Iron Age as well as later, it is curious that it should not also have been the standard type in Britain during the same period; as I have noted above, it only appears to have come into fashion at the end of the period. The reason for this may have been that the mouths of British equines were more tender than the mouths of continental breeds; nowadays, three-link bits are used for more tender-mouthed equines, since the additional link reduces the nutcracker action of the mouthpiece when the reins are pulled in and thus minimises the danger of pinching the tongue (Edwards 1963: 61-2). Moreover, Jope (1956b: 558) has indicated that the central links on the three-link bits would also have helped to prevent the horse taking the mouthpiece in its teeth and hence reducing the efficiency of the bit.

#### 7.5. Group IV: A composite form (No. 180)

A bit from the River Thames at London (No. 180) is of unique design, for it combines features of both Group II and Group III bits. The side-rings have projecting loops and ornamental panels that are very similar in design to those on the 'derivative-three-link' bits. However, they differ from the latter, in that the ornamentation on each side-ring is identical instead of being different. The jointed, two-link mouthpiece is presumably due to influence from the Group III bits, but the manner in which the links are connected to the loops projecting from the side-rings is unique.

This combination of features from two different kinds of bits indicates that the bit is unlikely to have been made before the middle of the first century A.D.; this is confirmed by the style of the champlevé enamel ornament. Since there is no sign of wear on the loops or on the side-rings, it would appear that the bit was brand-new when it came to be deposited in the bed of the River Thames.

#### 7.6. Group VI: Bits with pendent rein-hooks (Nos. 181-4)

A further kind of bit, not hitherto recognised in southern Britain during the late pre-Roman Iron Age, is represented by two pairs of bronzes in the Polden Hill and Seven Sisters hoards (Nos 183-4), two incomplete bronze objects from Colchester and Iwerne (Nos 181-2), and by two further objects in the Polden Hill hoard, an iron hook (B. M. P. R. B. : 1846.3-22.146; Harford 1803: 93, no. 18, Pl. XX. Fig. 3) and a bronze "cavesson-cum-cheekpiece" (B. M. P. R. B. : 1846.3-22.105 (currently mislaid); Harford 92, no. 9, Pl. XIX. Fig. 5).

Each of Nos 181-4 is flat at the back and has a rectangular loop projecting from one of its terminals; on Nos 181-3 the loops project from the ends, while on Nos 184A and B they project from the back. The objects were doubtless suspended from these loops. The iron hook from the Polden Hill hoard has a ring at the end of the longer arm.

It has been suggested that Nos. 181-2 formed part of side-looped strap-unions (Hawkes and Hull 1947: 329; Hawkes 1948: 52), that Nos 183-4 were trace-hooks (C. Fox 1958: 125; Savory 1968b: caption to Fig. 23), and that the iron object from the Polden Hill hoard was a linchpin (C. Fox 1947a: 78). However, it has already been argued (Chapter 3.2.1.) that the last of these cannot have been a linchpin.

There is no certain evidence for the use of traces, or of the swingle-trees to which they would have been attached, in Europe before the introduction of the true horse-collar late in the first millennium A.D. It is clear that the 'trace' observed by C. Fox (1947a: 24) on a Roman relief from Vaison (Alföldi and Radnóti 1940: Taf. XXXIII) is in fact a strap passing right round the body from the breast to the hind quarters and back again. The objects from Kärlich and elsewhere (Jacobsthal 1944: nos 165-7) that have been interpreted as trace-terminals (Günther 1934: 12-3, Abb. 1.1a and 3a), may have been attached to almost any part of the carriage-work. The Kärlich burial was not excavated under controlled archaeological



supervision, and Günther had to reconstruct the grave from verbal accounts. He (1934: 12) was able to establish no more than that

"Nach der bestimmten Angabe des Herrn Gross, der das eine Stück selbst an Ort und Stelle erhoben hatte, lag dieses (i.e. the 'trace-terminal') in der Nähe der Räder nach der Deichsel zu".

In fact, this description would appear to match the location of similar objects from the French Early La Tène cart-burials (Stead 1965b: 261, Figs 1 and 2c); the information culled by Günther cannot be considered as adequate evidence for the use of traces in the La Tène Iron Age. Stead (1965b: 261) has cited an object from La Tène as evidence for the use of the swingle-tree in the La Tène Iron Age; he also drew attention to the tree on a crook-ard from Vebbestrup in north Jutland. However, Vouga (1923: 90, Pl. XXXI.1) has stressed that

"Nous ne saurions dire positivement à quel usage était destinée cette curieuse pièce, dans laquelle nous croyons reconnaître un palonnier."

Although there is evidence for the use of the swingle-tree on crook-ards, it cannot therefore be assumed that swingle-trees were used in the traction of vehicles. Indeed, there is no such piece on the Dejbjerg wagon (Klindt-Jensen 1950: Figs 5 58 9). The hypothesis that Nos 183-4 were trace-hooks would therefore appear to be untenable.

Nos 181-2, both incomplete, are not, in fact, closely matched by any known side-looped strap-union (cf. Chapter 8.2.1.). The arms that 'grow' out of the intersection of the two large rings and discs on these pieces and that clasp the ends of the strap-bars, are best

paralleled on Nos 183A, B; the design of No. 182 is particularly close to the suspension-terminals of Nos 183A and B.

R.A. Smith (1925: 143) suggested that the other object from the Polden Hill hoard mentioned above (B.M.P.R.B.: 1846.3-22.105) "may have been a horse's frontal, like one from Pompeii," although he did not mention precisely to which Pompeian object he was referring. If, as is possible, the object referred to was one of the two bronze head-harness pieces illustrated in the Museo Borbonico, 8 (Naples, 1832): Tab. XXXII, the same types as are illustrated by Zschille and Forrer (1893: Taf. V.6, 7), then the parallel is not particularly close, for, although the Pompeii pieces share the central swelling panel of the Polden Hill object, in every other respect they are different.

Nos. 183-4 are closely matched by the pairs of rein-hooks suspended from the ends of the cheekpieces of a kind predominantly found in Italy (Zschille and Forrer 1893: Taf. VI; Krämer 1964a: Abb. 3). These hooks were used in place of the snaffle-rings that are found on other kinds of bit. The kind of bit concerned is very similar to the modern "curb-bit" (cf. Edwards 1963: Fig. 2), which has hooks of precisely the form that is seen on the Italian bits; however, the hooks on the modern curb-bits are used for the attachment of the ends of the curb-chain and not for the attachment of the reins. Rein-hooks are found on bits of different kinds in several areas of Europe in the late pre-Roman and Roman Iron Ages; for

example, in Bulgaria (Venedikov 1957), Jugoslavia (Todorović 1968: Tab. IV.4 and XXXVI.3), and Denmark (Klindt-Jensen 1950: Fig. 51c), though they are never exactly the same as those seen on the Italian bits mentioned above. The British examples must have been attached in a different way to the Italian ones, that is by straps instead of rings; nevertheless, the resemblance in general design is striking. Attached to the other ends of the Italian cheekpieces that sported rein-hooks, are omega-shaped mounts of a kind that has recently been recognised north of the Alps, for example at Manching (Krämer 1964a); it is just possible that the object from the Charlton district of Northamptonshire (No. 189), discussed below with the side-looped strap-unions (Chapter 8.2.1.2.), might have been a British variant of these pieces.

The bronze "cavesson-cum-cheekpiece" from the Polden Hill hoard may now be considered. In view of the evidence provided by the rein-hooks for bits with cheekpieces in southern Britain at the very end of the pre-Roman Iron Age, it is of additional interest that they might have been fitted to such a device as this kind of cavesson. It seems very possible that the swelling part of this object was placed over the nose of a pony, that the upper holes in its two arms held the ends of the mouthpiece, to which the bridle itself was attached, and that the holes at the ends of the arms were used for the attachment of the rein-hooks. The suggested arrangement is illustrated by Fig. 213.

## 8. Strap-unions (Nos 185-214)

### 8.1. Introduction

Several objects, of various forms, appear to have been designed to hold together the two ends of straps travelling towards each other in diametrically opposite directions. Projecting either from the back or from the sides of each object are two rectangular or rounded loops; in some cases these loops have been worn smooth by prolonged use. The location of the wear on the inner faces of the loops indicates that the ends of the straps were folded back on themselves (perhaps stitched down?); this wear is most clearly seen on the strap-union of unknown provenance in the British Museum (No. 214).

At least some of the strap-unions appear to have been used in harness of pairs of chariot-ponies, notably where the loops project from the back, for some of these have been found in predominantly or exclusively 'horsey' contexts; of these, pairs are known from the Seven Sisters (No. 212), 'Stanwick' (MacGregor 1962: nos 5 and 6) and Westhall (No. 208) hoards, which suggests that one was intended for each pony. Precisely where on the pony-harness these objects were used is not known. Of the strap-unions with side-loops, very few have been found in functionally instructive contexts. No. 195 was included amongst the cremated bones in a pedestal urn, suggesting that it was a personal ornament, used perhaps as a belt-buckle. Another possible example, an incomplete specimen of iron, from a burial in the 'War Cemetery' at Maiden Castle (Wheeler 1943: 281,

355, Fig. 92. 10), may also therefore have been a belt-buckle.

However, the discovery of a pair of these side-looped strap-unions in the recently discovered cart-burial at Garton Slack, East Riding (Brewster 1971: 291), suggests that they were also at least occasionally used in sets of pony-harness.

## 8.2. Classification

The strap-unions may be divided into two principal groups: I, those with strap-loops projecting from opposite sides; and II, those with concealed strap-loops projecting from the back. Each group may be further divided into sub-groups.

### 8.2.1. Group I: Side-looped strap-unions (Nos 185-202).

In comparison with Group II strap-unions, the side-looped forms are more uniform in design. Most of the latter are in the form of a figure-of-eight (sub-group A), but there are also a few unique forms that will be considered separately. In general, Group I strap-unions are smaller than Group II specimens, although only sub-group A of the latter has consistently larger strap-loops.

#### 8.2.1.1. Sub-group A: Figure-of-eight forms

Fifteen examples of this sub-group have been discovered; with the exception of a pair from the recently discovered cart-burial at Garton Slack, East Riding (Brewster 1971: 291), all have been found in southern Britain. Furthermore, with the exception of a fragment of an iron union of uncertain form from Maiden Castle (Wheeler 1943: 281, Fig. 92.10a), all are of bronze.

Each consists basically of a figure-of-eight with a strap-loop on either side parallel with its long axis. The forms of the loops and of the figure-of-eight motifs vary, but to a certain extent varieties can be distinguished. For example, the true figure-of-eight designs, i.e. a pair of conjoined rings, are associated with column-like loops (that is, the terminals of the loops are shaped like the capitals of columns) in three, possibly four, instances (Nos 185, 191, 200, and 193 respectively); Nos 194 and 198 differ only in the designs of their loop-terminals. Column-like loops are also present on Nos 195 and 197, which share a central roundel (open on No. 195, but solid and provided with a plastic motif on No. 197) interposed between a pair of swelling crescents. Two other strap-unions (Nos 192 and 199) have a central circular opening at the intersection of two solid discs; however, details of the ornament and the forms of the loops differ, the loops of No. 192 comparing more closely with those on Nos 186, 196 and 202. However, of the latter three No. 202 is the plainest, and, whilst the loops of Nos 186 and 196 are slightly moulded at each end, those on No. 192 are very finely modeled. Nos 186 and 202 are further linked by the use of solid domes to make up the figure-of-eight; whilst No. 202's domes are plain, the four 'corners' of No. 186 are embellished with small panels of ornament that is closely related to the 'Ulceby-Snettisham' style.

The most striking feature of these figure-of-eight strap-unions

is that many of them were found in archaeological excavations and/or on known settlement-sites, although, for varying reasons, information on their contexts is not always very precise. The best associations are provided by those from the Garton Slack and Letchworth burials. However, although the former burial clearly belongs to the same series as the other cart-burials from the East Riding of Yorkshire (J.W. Brailsford: pers. comm.), burials that are, nevertheless, very difficult to date (Stead 1965a: 81-4), I have not yet had the opportunity to study its contents; it cannot therefore be used for the present chronology. The burial at Letchworth that contained No. 195, also contained a wheel-thrown pedestal urn which Birchall classed as a variant of her Type Ia (1965: 250, fn. 3); in Kent Type Ia urns belong to her 'Early' group of the Aylesford-Swarling culture which may be pre-Caesarian in date (Ibid.: 288-90). But since the Letchworth urn is not identical to the Kentish Ia urns, the same chronological reasoning may not be applicable; moreover, Birchall (Ibid.: 250, fn. 3) noted that the closest Kentish parallel is in her Grave 'Z' at Aylesford (Ibid.: Fig. 7.55), which may rather belong to her 'Middle' group and may therefore be of post-Caesarian date. No. 200 comes from a hoard that also includes a pair of three-link bits embellished with 'Ulceby-Snettisham' ornament (No. 159), a point of some interest in view of the related ornament on No. 186. Despite the statement provided by Wheeler (1943: 272) that the Maiden Castle piece (No. 196) was found in a "layer containing mixed Iron

Age A and Iron Age B sherds, and ascribable therefore to the middle or third quarter of the first century B.C.", the information thus provided is not sufficiently precise for critical analysis; such is also true of the contextual information given for Nos 186, 191 and 197-8. The 'War Cemetery' at Maiden Castle, in which the possible fragment of an iron strap-union was found, is most probably to be assigned to the Roman conquest in the middle of the first century A.D.

#### 8.2.1.2. Other forms of side-looped strap-unions

The five remaining strap-unions (Nos 187-9, 190 and 201) are each unique in design, although Nos 187 and 201 both have dumb-bell-shaped strap-loops with hemispherical terminals. The two back-to-back crescents of No. 201 appear to be a unique motif, although the manner in which their tips abut against the terminals of the loops is comparable to the treatment of the arms that splay outwards from the sides of the central ring of No. 187. Such abutment rather than absorption of curved elements is relatively common in the later pre-Roman Iron Age, and can be seen elsewhere, for example, on the handle of the Desborough mirror (No. 340) and on the involuted brooch from Beckley (Leeds 1933a: Fig. 19); it is possible that this a feature derived from Hellenistic design, for it occurs for example on the handle-escutcheons of Eggers' Type 18 bronze buckets (Eggers 1951: Taf. 4) and on the handles of Augustan and later drinking-cups of the Hoby type (cf. Strong 1966: Fig. 27e,



Pl. 35B). Indeed, Reinecke (1902: 92-3, Fig. 12) has indicated that this sepal-like motif was widely adopted from Hellenistic design in Late La Tène Europe.

No parallels of any kind can be found for the tortoise-shell-like body of No. 188, nor the corrugated effect of No. 190, but the employment of the lyre-motif, as seen on the strap-union from the Chalton district (No. 189), is common in designs of our period (C. Fox 1958: 87, ff., Fig. 53). No. 189 is unique in that, although the strap-loops are at opposite ends, one of them is concealed while the other is visible from the front. The trick of partly ornamenting the flat back of No. 189 is a rare one, but is paralleled on a Group II strap-union (No. 213) and on Nos 183A and B, 216-7, and 229. Since it cannot have been seen when the objects were in use, the location of ornament on the backs of these pieces is difficult to explain.

#### 8.2.1.3. Conclusions

Both these five unique side-looped strap-unions and the figure-of-eight type are confined to southern Britain, the most northerly specimens yet discovered being those from the recently discovered cart-burial at Garton Slack, although later forms are known from the north (cf. MacGregor 1962: nos 5-10). R.R. Clarke has suggested that they are of continental origin (1951b: 222), since a slightly similar strap-union has been recorded from La Tène itself (Vouga 1923: Pl. VIII.49). While it is possible that some kind of strap-union was

introduced from the Continent, the la Tène specimen is not particularly similar to any of the British examples; moreover, no other pieces from the Continent are known to the writer that could be considered ancestral to the British forms. It seems likely, therefore, that they were a British innovation.

### 8.2.2. Group II: Concealed-looped strap-unions (Nos 203-14)

Group II strap-unions differ from Group I in having their strap-loops concealed from view at the back. Two sub-groups (A and B) are relatively uniform in their respective designs; however, sub-group C consists of strap-unions that cannot be so easily classified, although there are grounds for arguing that three of the latter may represent a localised variety. Group II strap-unions differ too from Group I, in that every specimen is (or was) ornamented with a champlevé enamel design; none of the Group I strap-unions is ornamented in this manner.

#### 8.2.2.1. Sub-group A: Quadrilobate strap-unions

Sub-group IIA strap-unions have flat or very slightly convex plates with pairs of strap-loops projecting from the back. Seven examples are known, including a pair (Nos 203-8). Each plate is ornamented with champlevé enamel (and with clear glass too on Nos 208A and B), and also, with the exception of No. 205, with incised lines and/or areas of pointillé work; in all of the plates but the pair from Westhall (Nos 208A and B) there are central openings of curved outline.

Two varieties may be distinguished, based on the shape of the plates:

A - as in the Polden Hill and Santon hoards (Nos 205-7), the plate has four lobes, set in pairs between two almost semi-circular convex curves; B - as at London, Norton and Westhall (Nos 203-4, 208A and B), the plate has two additional semi-circular convex curves of smaller radius, each interposed between the two members of each pair of lobes. The latter variety is distinguished also by the use of more than one colour for the inlays, and by the very similar layout of the ornament on the sinister and dexter parts of all four of them; these additional features and the localised distribution suggest that variety B strap-unions were the product of a single workshop or group of smiths.

Since quadrilobate strap-unions are present in the Polden Hill and Santon hoards, it is clear that at least variety A was current at the time of the Roman Conquest of southern Britain; however, there is no contextual evidence at present to suggest precisely when either variety came into, nor went out of, fashion. Since the two specimens in the Santon hoard appear to be new (for there is no sign of wear on their strap-loops), it is clear that not only was the type still in use in the middle years of the first century A.D., but also that it was still being made. The contextual evidence for variety B is not as good as that for variety A, for the London and Norton examples were single finds, while the dating evidence for the Westhall hoard is not as good as it has sometimes been claimed (e.g. by R.R. Clarke 1940: 68-9); nevertheless, the hoard also included

eight Group VIIIa terrets (Nos 72-5), that are known from other contexts to have been current in the middle years of the first century A.D. (q.v. Chapter 2.2.7.1.). The area of distribution of these strap-unions is primarily east Anglian, but with one outlier in Somerset; in view of the small number of findspots (five) and in view of the fact that the variety  $\Delta$  strap-union from the Polden Hill hoard is only paralleled in the Santon hoard, it would be premature to suggest that it had been imported from east Anglia.

Leeds (1933a: 45, n. 1) has suggested that these strap-unions were developed from the figure-of-eight side-looped type, but in view of the fact that no typologically intermediate form has been discovered, it is difficult to see why he should have made this suggestion.

However, our variety  $\Delta$  strap-unions may well have been the direct typological antecedents for the two quadrilobate strap-unions ornamented in the northern British 'boss-style' from the 'Middlebie' hoard (Childe 1935: Pl. XV, bottom right) and from Traprain Law (Burley 1958: Pl. XIII. No. 318), although it could be argued that these two strap-unions were in fact contemporary with the southern examples, and that the difference in design was cultural rather than temporal.

#### 8.2.2.2. Sub-group B: Cruciform strap-unions

At least one strap-union (No. 209) has been found in southern Britain that belongs to the predominantly northern British form of cruciform plan with rectangular loops projecting from the back (Simpson 1966: 50-5, 114). An unprovenanced example in the British Museum

(No. 214) is also listed here, even though it is more probable, in view of the known distribution of the type, that it was found in northern Britain.

Both the design of, and the disposition of the ornament on, the sinister and dexter arms of No. 209 are exactly paralleled on a strap-union in the 'Middlebie' hoard (Childe 1935: Pl. XV, bottom row, fourth from left; Simpson 1966: no. 20). The square central panel of No. 209 is also seen on a cruciform mount of unknown, but presumably Italian, provenance preserved at Florence (Kemble, et al. 1863: 195, Pl. XIX. Fig. 5); Simpson (1966: 114) has incorrectly described this piece as a strap-union, despite the fact that it only has a single loop at the back. The enameled pointed 'leaves' that constitute the upper and lower arms of No. 209 are repeated in the centre of No. 214, whilst the enameled pattern on the sinister and dexter arms of the latter are almost exactly paralleled on the sinister and dexter arms of the Florence mount. It seems likely, therefore, that the Florence and 'Middlebie' pieces, as well as Nos 209 and 214, were the products of the same workshop-tradition; the Florence piece was presumably an ancient export from Britain like the Hofheim and Játiba terrets (Nos 67 and 90) and the Nijmegen mirror (No. 345).

#### 8.2.2.3. Sub-group C: Other forms of concealed-looped strap-unions

Six other strap-unions with strap-loops projecting from the back remain to be considered. The pair from the Seven Sisters hoard

(No. 212) is closely paralleled by one from Chepstow (No. 211), which suggests that a local south Welsh variety may be represented. At either side of each of these three pieces there is a rectangular panel with a rectangular loop projecting from the back; the main motif is in the form of an S-scroll. The half-dome rosettes at either end of the scroll on the Seven Sisters strap-unions are paralleled exactly on the side-rings of a "derivative-three-link" bit in the same hoard (Nos 166A and B), which suggests that they formed part of the same set of harness. Since full rosettes occur on the knobs of the pair of Group IX A terrets from this hoard (No. 85), it is probable that they too belonged to the same set of harness. Similar enameled rosettes are quite common; they can be seen, for example, on the knobs of three of the Group IX B terrets in the Saham Toney hoard (Nos 91-3), in the centre of the cruciform strap-union in the 'Middlebie' hoard (Simpson 1966: no. 20), and on the "derivative-three-link" bit from Rise, East Riding (Brailsford 1953: Pl. X.3). The 'Middlebie' strap-union also has enameled panels covering its strap-loops of exactly the same kind that are to be seen on the Seven Sisters strap-unions.

Three strap-unions remain to be considered: Nos 210 and 213, and a find from Ober-Olm in the Rhineland-Palatinate, preserved in the Altermuseum, Mainz (Reinecke 1905: 354-5, Fig. 8 & Henry 1933: 84, Fig. 12.1). Although at first sight dissimilar,

all three strap-unions have pairs of large flat discs ornamented with red champlevé enamel comprising the basic design; in addition, the Ober-Olm strap-union has two discs of opaque white glass inset into it. The ornament on this specimen is most closely paralleled on the Westhall strap-unions (Nos 208A and B), although its overall design is most closely paralleled by some of the strap-unions in the 'Stanwick' hoard (MacGregor 1962: nos 5, 6 and 8). The other two strap-unions (Nos 210 and 213) are also each unique in their respective designs, although the manner in which the ornamental arms 'grow' out of the sides of No. 213 is similar to the arms on the pendent rein-hooks from Colchester and Iwerne (Nos 181-2) and to the handle-escutcheon, and to the internal loop within the terminal ring, on the handle of the Desborough mirror (No. 340). No. 213 also has incised ornament on the back, a curious feature that has already been noted on the back of No. 189 (section 8.2.1.2.).

## 9. Pendants (Nos 215-30)

### 9.1. Introduction

Three different kinds of pendants possibly or probably connected with the harness of horses may be distinguished. For only the third kind is there reasonably certain evidence for attribution to equine harness. The largeness of three of the specimens of the first group (Nos 220-1 and 225) is such that they would somewhat inconvenient if sported as personal ornaments. However, none of this first group has been found in a functionally instructive context; the same is true of the second group.

### 9.2. Classification

As I have already indicated, three kinds of pendants may be distinguished. They are numbered I, II, and III, respectively. Since the two specimens (Nos 228-9) that comprise Group II have already been considered above in Chapter 2.4., they will not be further discussed.

#### 9.2.1. Group I: Loop-shanked pendants (Nos 215-27)

At least seventeen complete and incomplete specimens of this kind of pendant have been discovered, twelve from southern Britain, four from the north, and one from the Netherlands. With the exception of two from northern Britain, each originally consisted of a shank with a loop at one end and a decorative triskele or roundel at the other; the triskele or roundel is set in a perpendicular plane to the axis of the shank. The two northern exceptions to this have (had) three struts in place of the shank, connecting the loop with the roundel: one from



Aldbrough (Myres, Steer and Chitty 1962: 52, 75, Fig. 26.13), the other from Bogmore Old Farm, Clova, Aberdeenshire (N.M.A.S.: FG 30; unpublished); of the latter only the roundel survives together with the stump of one of the struts at the back).

As noted above, the original function of these objects is far from clear. Although it is evident that they were pendants - there are pronounced wear-facets indicating such a use on loops of Nos 222 and 225 - from what they were intended to be suspended is not known. Nos 220-1 and 225, if sported by an individual, would constantly have been knocked about in a most uncomfortable way on account of their size; it seems more likely therefore that they were in some way attached to pony-harness, although none has yet been found in a 'horsey' context. As the catalogue-entry indicates, No. 226 was broken in antiquity - the whole of the shank is now missing - but continued to be used as a pendant, suspended from the edge of the roundel, as the wear indicates, instead of from the loop as it must have been in its first phase of use. Whether, in view of the circumstances of discovery, a bronze strap-tag really was hooked into the loop of No. 222, we cannot be sure, although this would not have been inconsistent with the presumed usage of such pendants.

Most of the pendants are of bronze and were cast in one piece, but Nos 220-1, of iron, Nos 225 and 227 and those from Seamill, Ayrshire (N.M.A.S.: HR 470; Munro 1882a: 63, Fig. 3), and Dowalton Loch, Sorbie, Wigtownshire (N.M.A.S.: HU 62; Munro

1882b: 49-50, Fig. 26), of bronze, were made from more than one piece of metal.

From their contexts, it is clear that these pendants were being used, if not made, in both pre-Roman and Roman times; although, to judge by its design, No. 226 was made in the first century A.D., it continued to be used at least intermittently, for it may have been lost and re-discovered, until the fourth century A.D.

### 9.2.2. Group III: Looped pendants

The bronze object (No. 230) from Hut 60 of Richmond's excavations at Hod Hill is of unique design in southern Britain, but may perhaps be compared with an object in the 'Stanwick' hoard (MacGregor 1962: no. 17). The latter is both similar in design, and in apparent function, since both share a hidden strap-loop at or close to the top and a similar mirror-handle-like loop. Furthermore, each was found in a 'horsey' context; No. 230 with a Group V terret (No. 38), while the design of the other indicates that it belongs to Set B of chariot-pony-harness in the 'Stanwick' hoard (MacGregor 1962: Pl. III, lower).

The beaded and other ornament on No. 230 is related to the 'Ulceby-Snettisham' style, in particular to the ornament on such pieces as the three-link bits from Ringstead and Ulceby (Nos 159 and 161). That No. 230 should have been found with a Group V terret (No. 38) is of particular interest in this connection, since three-link bits have also been found in association with Group V terrets at Arras (Stead 1965a: 89-91).

## 10. 'Cheekpieces' (Nos 231-40)

### 10.1. Definition

This group of objects, of which fifteen are known from southern Britain and six from the north, are generally referred to as "cheekpieces". All but two (No. 238 - a pair of iron in the Polden Hill hoard) are of bronze. Each one has a central slot of rectangular or oval profile; with the exception of one of the 'cheekpieces' in the 'Stanwick' hoard (MacGregor 1962: no. 21) each is twice waisted beyond either end of the central slot, and has more or less expanded terminals; except in the central position, each specimen is of circular section throughout its length. An unpublished enameled specimen from Osgodsby, Lincolnshire (J. B. Whitwell: pers. comm.) is not discussed, since I have not seen it.

### 10.2. Ornament and chronology

All of the bronze examples are ornamented except those from South Shields (Simpson 1966: no. 38) and the 'Stanwick' hoard (MacGregor 1962: nos 19-21). The ornament is invariably found on only one of the faces, generally only on the central panel, but is also occasionally present on the end-faces too. All of the southern British 'cheekpieces' (except No. 234), as well as a specimen from Wooden Eckford, Roxburghshire (Piggott 1955a: 20-1, Fig. 4, E 1), are embellished with champlevé enamel. Only one other northern specimen, the 'cheekpiece' from the Roman fort at Birrens, Dumfriesshire (Birley 1938: 337, Fig. 38.3), is ornamented; the

relief motif on the face of this 'cheekpiece' is paralleled on a button-and-loop fastener from Lochspouts crannog, Ayrshire (Leeds 1933a: Fig. 32c). The specimens with enamel ornament also have incised linear work; the latter is mostly used to give emphasis to the outlines of the enamel insets rather than to add further details to the pattern. Such outlined enameling is characteristic of objects ornamented with champlevé enamel, that were current in southern Britain at the time of the Roman Conquest, for example, on Group VIIIA terrets and Group IIA strap-unions. On No. 233 there is a subtle use of pointillé work to give a kind of reserved flattened S-scroll around the red enamel discs; a similar pattern is seen, in a different technique (in repoussé relief), on No. 444. The ornament on No. 234 is difficult to comprehend owing to wear, corrosion and recent scratching. The quatrefoil pattern on No. 240 is reminiscent of the petalled rosettes seen on such objects as the pair of terrets in the Seven Sisters hoard (No. 85) and the Rise "derivative-three-link" bit (Brailsford 1953: Pl. X.3), whilst the simple geometric arrangement of square and circular insets on No. 232 is also characteristic of such objects as Group IX terrets. The Wooden Eckford 'cheekpiece' is of some interest, for, although the form is unique, which might suggest that it was a local type, its ornament is clearly southern British in character, a fact which may indicate that it was imported from the south like the Group VIIIA terret from Auchendolly (q.v. Chapter 2.2.7.1;

cf. also Stevenson 1966: 25). The arrangement of the two pairs of back-to-back commas with an hour-glass-shaped motif interposed on its side is very similar to a harness-mount in the 'Stanwick' hoard (MacGregor 1962: no. 1), whilst each pair of back-to-back commas plus the concave curve of one side of the 'hour-glass' is well matched in the loops of the central 'palmettes' on the Birdlip and Holcombe mirror-plates (Nos 335 and 343).

The contexts of the southern British examples (cf. the catalogue-entries in Volume II), as well as their ornament, suggest that they were current at the time of the Roman Conquest; in the north they continued to be made and used probably into the second century A.D. (Simpson 1966: 62-4).

### 10.3. Function

The generalised distribution of these objects suggests that they were a fairly standardised piece of equipment, but their original function is difficult to determine. Their occurrence in the Polden Hill and 'Stanwick' hoards suggests that they may have been connected with the harness of chariot-ponies. The seven specimens in the Polden Hill hoard include a pair of iron (No. 238) and a (complete?) set of four of bronze (No. 236). The latter might suggest that a pair was included in the harness of each pony. It is of interest, in this connection, that two of the three in the 'Stanwick' hoard form a pair (MacGregor 1962: nos 19-20). As I noted at the beginning of this chapter, these objects are generally referred to as "cheekpieces", the implication

presumably being (for it has never been overtly stated) that each one was slotted onto the end of the mouthpiece of a bit. This argument is presumably based on their apparent similarity to known cheekpieces of antler, horn and bone (cf. Roes 1960). However, the fact that none of them has ever been found slotted onto the mouthpiece of a bit, that the Polden Hill and 'Stanwick' hoards both contain bits of other forms, and that very similar objects have been found in Hallstatt C vehicle-burials in Central Europe alongside bits of other forms (cf. Kossack 1954: Abb. 21.C), surely indicates that they cannot have been cheekpieces. MacGregor (1962: 31) has offered an alternative explanation, that each one "terminated each trace leather and was passed through a ring-mounting on the chariot swingle-tree, thus combining the advantages of strong linkage with swift 'decoupling'". It is interesting that it was precisely according to this explanation that these objects were used in the half-size model of a harnessed chariot prepared for the 1951 Festival of Britain, that is now housed in the Jewry Wall Museum, Leicester. However, since there is no certain evidence for the use of swingle-trees and traces in the ancient world (cf. Chapter 7.6 ) (for they do not appear to have been used before the introduction of the true horse-collar into Europe late in the first millennium A.D.), this explanation must be discounted. Nevertheless, the idea of "swift decoupling" is attractive, especially since similar objects of Late Bronze Age date have since been demonstrated to have been used in precisely this way (R.J.C. Atkinson 1965: 132, n. 19).

### 11. 'Harness-brooches' (Nos 241-4)

Four objects in the Polden Hill hoard (Nos 241-4), of which Nos 243-4 were once hinged together, appear to have been used as kinds of brooches, for Nos 241-3 are provided with hinge-plates and catches for (now missing) brooch-pins. In view of the fact that most of the other objects in the hoard appear to have been used in the harness of equines, it seems likely Nos 241-4 were also intended for this purpose. The similarity of details of the ornament on Nos 241-2 to the Group IIA strap-union No. 205 suggests that all three pieces may have formed part of the same set of harness. Moreover, the unusual technique of punching dot-facets at intervals along some of the incised lines on Nos 243-4 is also found on the Group VI terret No. 46 in the same hoard; it may therefore be suggested that these three pieces formed part of another set of harness.

These four 'harness-brooches' are almost unique. Whilst nothing similar was found in the 'Stanwick' hoard (MacGregor 1962), a currently mislaid object from Ashdown, Berkshire (B. M. P. R. B. : 1880.6-18.1; R.A. Smith 1907: 97, Fig. 2), appears to be quite close in design to No. 243. A fragment of an object from Hod Hill apparently quite similar in design to the Ashdown piece has recently been published (Richmond et al. 1968: Pl.           ), an object that I have also not been able to see 'in the flesh'. Both these objects are

marked as purple spots on Map 19, whereas Nos 241-4 are marked with a single black spot. In view of the small total number of finds, it is doubtful whether the apparent restricted distribution of these 'harness-brooches' can be considered significant.

C. Fox (1952b: 52-4, Fig. 4) offered a set of highly ingenious explanations of their possible uses; however, there is no evidence either to support or to reject his hypotheses. Nevertheless, it is possible that Nos 243-4 may be paralleled by certain pieces of cavalry-harness found in Roman military contexts of the mid-first century A.D., such as have been found at Fremington Hagg, North Riding (Webster 1971: Figs 9-12), Hod Hill (Brailsford 1962: Fig. 5, A 125), and Wroxeter (Bushe-Fox 1916: 30, Pl. XVIII.30). Whether or not these Roman pieces provided models for such objects as Nos 243-4 is an open question, although the late context of the latter may give grounds to support such a hypothesis.



12. 'Dolphins' (Nos 245-50)

Eight bronze objects have been found in Britain that C. Fox (1958: 130) has termed 'dolphins' on account of their shape. Seven have been found in southern Britain (Nos 245-50; the seventh, not listed in the Catalogue, was discovered in the Claudio-Neronian fort at Usk, Monmouthshire, in 1971 (W.H. Manning: pers. comm.); while only one has been found in the north, at Brough, Westmorland (C. Fox 1958: Pl. 75a). As can be seen from Map 19, the main concentration is in the south-west.

At the head of all the 'dolphins' except No. 250 there is a perforated disc which doubtless served for their attachment to something. Since three of them occur in the Polden Hill hoard (Nos 247-9), and since two of these three (Nos 248-9) form a pair - each being a mirror image of the other, it is possible that they may have formed part of the harness of a pony or pair of ponies. That they may have been connected with pony-harness is suggested by the find of a very similar object in a 'horsey' context in Roman Pannonia: this piece has a 'tail' in the shape of a duck's head, a body in the shape of a dolphin, a ring to one side of the 'head' for attachment (Alföldi 1936: 210, Tá. V.3).

Further examples of "dolphins" have been found in Roman Iron Age contexts on the Continent, for example, in a first century A.D. burial at Giebutow, Kraków prov., Poland (Inventaria Archaeologica.

Pologne. Fasc. VI (Łódź 1961): Pl. 35(1): 10, 11), a burial that belongs to the same 'Lubsow' group as the burial which contained the British bronze bowl (No. 397), and at Novaesium (1906: 380, Figs 12-3, Taf. XXX.62). Zimmermann (1969: 128, n. 16) has even suggested that the two (incomplete) examples from Poland may have been imported from Britain; however, this is unlikely, since others have also been found on the Continent, that are not particularly close to the British series. Moreover, it is probable that the British series were derived from a continental prototype of Roman date, for, where known, the contexts of the British examples are all late. Three come from the Polden Hill hoard which probably dates to the middle years of the first century A.D., while another comes from the Flavian and later fort at Brough, Westmorland. The area around Tooley Street, London, in which No. 250 was discovered, was a Roman suburb of London strung out along the road to Rochester and Canterbury. Old finds and recent excavations indicate an absence of immediately pre-Roman occupation in the area, and show that the earliest settlement is to be dated to the Flavian period (H. Sheldon: pers. comm.).

### 13. Sword-scabbards and hilts (Nos 251-97)

#### 13.1. Introduction

Numerous complete and incomplete swords and sword-scabbards of pre-Roman Iron Age date have been discovered in southern Britain. The fundamental study is still that of Piggott (1950), which provides a nearly complete list not only of the swords but also of the daggers discovered up to 1950. Parts of that study have been superseded by more recent work (R.R. Clarke and Hawkes 1955; Jope 1955a and 1961b; Simpson 1966: 138-61). In the present discussion only those swords and scabbards of Middle and Late La Tène tradition will be considered; a further limitation is provided by the materials of which they are made. Since I am primarily concerned with bronze, scabbard-less swords and scabbards wholly of iron are not considered. A detailed criticism of the relevant sections of Piggott's classificatory scheme will not be given here, for, since subsequent discoveries and studies have shown it to be unsatisfactory, it seems preferable to start again from first principles.

Since there is such a great variety in the forms and details of design of the scabbards, classification is difficult; if attempted in detail, it is likely to lead to a plethora of types, little less in number than the total number of scabbards. Broadly speaking, however, they may be divided into two main series, according to the respective designs of the swords that they contain or once contained. As will be seen below, the division is primarily a functional one, depending on

the ways in which they were probably used; the two series are derived from swords of Middle and Late La Tène character respectively. Although small groups can on occasion be discerned within this twofold division, many of the sword-scabbards cannot so easily be grouped together into clearly distinct types. Hence, it seems likely that these smaller groups represent no more than the products of either individual or closely-related workshops. Before embarking on the analysis of the southern British pieces, their continental cousins and antecedents must be briefly considered.

### 13.2. Continental swords and scabbards

The La Tène Iron Age swords of central and western Europe have been divided into three main series, in large measure successive: Early, Middle and Late. As Hodson (1964a) has emphasised, it is often difficult to correlate the relative chronologies of different regions, and to demonstrate the universal absolute contemporaneity throughout the La Tène world of certain fairly generalised types. In France and Switzerland at least, it is clear that the three successive sword-types do broadly correspond with the three main phases defined by other metal types, that is, with La Tène I, II, and III. Suffice it to say, however, that in certain cases Early La Tène swords in some areas may be partly contemporary with Middle La Tène swords in other areas, and Middle ones with Late ones (de Navarro 1960: 108-10), and that the earliest examples of each of the three sword-series do appear to occur in chronological succession.

The succession is not merely typological but also functional, since the three series appear to have been designed for different kinds of fighting. The blades of Early La Tène swords gradually taper from the hilt to a very sharp point; these swords were probably used as rapiers, that is, as thrusting rather than slashing or cutting weapons. However, whilst Middle La Tène blades are still pointed, the point is blunter than on Early La Tène weapons. The blade either tapers relatively slightly throughout its length or is parallel-sided for the greater part of its length, only tapering slightly on its lower section; both kinds of blade are brought fairly suddenly to a relatively wide-angled point. These swords were intended as much for cutting and slashing as for thrusting. However, Late La Tène swords could only have been used for cutting or slashing, since the tips of their blades are either rounded or even, sometimes, squared. The blades are parallel-sided either throughout their length or for only half or little more than half thereof; in the latter instance, they taper very slightly towards the tip for the rest of their length. Nevertheless, a few blades taper very slightly throughout their length, but are still rounded or squared at the tip. Commensurate with the change in design and purpose, Late La Tène sword-blades are often considerably longer than their immediate predecessors; whereas few Middle La Tène blades are more than about 800 mm long, most Late specimens are longer, several of them being more than a metre in length. De Navarro (1960: 109) considers that blades of Middle La Tène design from

La Tène itself, that are longer than 720 mm, were contemporary with at least some Late La Tène swords from elsewhere.

Scabbard-design is more complex than this, but as a general rule it can be taken that the overall shape follows that of the sword for which it was intended. Several kinds of chapes and mouth-profiles are known on Early La Tène scabbards; the latest form of chape is the open or ring-type, attached to or actually part of the scabbard-frame that runs a short distance up the sides of the scabbard from the tip. On Middle La Tène scabbards the mouth is ogival or bell-shaped; the chape clings to the tip of the scabbard. For Middle La Tène scabbards from the eponymous site de Navarro (1960: 107) has proposed a two-fold grouping, but this is only occasionally valid elsewhere. The scabbard-frames on Middle La Tène swords are consistently longer than those on Early specimens, and sometimes extend as much as a third of the way up the scabbard. Late La Tène scabbards frequently have squared mouths, although a few still have the ogival or bell-shaped profile; however, even on scabbards of the latter group there is a straight band at the base of the arch. The chapes likewise cling to the scabbard-tips and are often considerably thickened at the very end. The frames are even longer than those on Middle La Tène scabbards, extending in one or two cases as much as half-way up the sides of the scabbard. The frames are further characterised by series of more or less regularly spaced cross-struts to give additional strength; there are generally more

struts across the back-plate than across the front-plate.

The kinds of continental sword described above, while not complete, represent those forms that provided models for the British series. Other forms do exist, for example, a probably late type with only slightly tapering sides and very suddenly angled tip (Bianchetti 1895: Tav. V.4; R.A. Smith 1925: 73, Pl. IX.5); however, these are of less importance in assessing the British swords.

### 13.3. Southern British swords of Early La Tène tradition

The only British sword-scabbard of Early La Tène tradition with bronze mounts is that dredged from the River Thames at Standlake, Oxfordshire (Case 1949: C. Fox 1958: 13-4, Pl. 22a; Jope 1961b: 76, Pl. Va,c). Whilst in general terms the scabbard belongs to the continental La Tène tradition, the details of its design, drawn from different continental sources, indicate that it is of British manufacture. In this respect it sets the pattern for virtually all of the later swords and scabbards found in southern Britain. Whereas continuing, if intermittent, influence from the continent can be detected in the British series, the pieces are all distinctively insular in character. Very rarely can a case be made out for regarding a sword and/or scabbard to have been imported from the continent; as will be seen, at no point in time during the later pre-Roman Iron Age can one discern a distinct horizon of continental influence in the British

sword-smithing tradition.

The Standlake scabbard is of the long gradually tapering 'Early La Tène' form, and has an open chape of the most developed Early La Tène kind. The mouth of the scabbard has the ogival profile of Early to Middle (and some Late) La Tène scabbards. At the top and at the tip of the otherwise completely iron scabbard are two ornamental sheet bronze plaques. The upper plaque has a repoussé relief pelta-and-loop motif with engraved scrolls issuing from the tips of the pelta and from the sides of the loop. The relief work and the scrolls on the flat are bordered by rocked engraved lines, while the whole pattern is reserved against a field of coarsely set out rocked engraved hatching; as Lowery and Savage have indicated (Lowery, Savage and Wilkins 1971: 180), the tool used in this work was a fine round-nosed graver. The ornament on this and the lower plaques is related, as Jope has shown (1961b: 76-7), to the formalised foliate scroll-work of 'Waldalgesheim' tradition; as he has further indicated (1971b: 177-8), the term 'Waldalgesheim Style' is not particularly useful for the attribution of ornamental patterns except in a very restricted sense and should "logically be restricted to examples demonstrably influenced by the work of the Waldalgesheim Master and his atelier". The ornament on the Standlake plaques may be compared with that on the staples of the suspension-loop on the Middle La Tène scabbard from Cernon-sur-Coole (Jacobsthal 1944: no. 113), on the Bussy-le-Château



neckring (Jope 1961b: Pl. Vb), and with an engraved motif at the top of an advanced Middle La Tène scabbard from the eponymous site (Vouga 1923: Pl. V 10). All of these pieces are far removed from the ornament on the Filottrano neckring which Jope (1971b: 168) considers to have been made in a different workshop from that which produced the Waldalgesheim pieces. The sinuous lower edge of the upper plaque and the sinuous upper edge of the lower plaque on the Standlake scabbard are, to my knowledge, not paralleled elsewhere, but may perhaps be derived from the sinuous lines engraved along the lower edges of the ornamental panels on certain scabbards of advanced Middle La Tène form (e.g. Vouga 1923: Pl. V.4, 5, 7, 9, 10).

At the top of the frame of the Standlake scabbard there is a wrought iron strut ('bridge') of double hour-glass form with spirals incised on it. De Navarro (1960: 90-1) has shown that it is related to the 'bird-bridges' on Swiss scabbards of advanced Middle La Tène form; he was able to point to only one other scabbard with this feature that had been found outside Switzerland: from Heidenheim, Württemberg (Zürn 1957: Taf. 32.10). Another scabbard with a 'bird-bridge' has been found at Odžaci, Sombor, Yugoslavia (Todorović 1968: Sl. 7.1, Tab. XXXVII.5); other features of the Odžaci scabbard suggest that it was made in Switzerland at an advanced date in Middle La Tène (Ibid.: Tab. XXXVII.1-4). The 'bird-bridge', coupled with the unusually heavy wear on the lower bronze plaque, led de Navarro (1960: 91, n. 25) to suggest that the Standlake scabbard

was probably a composite piece, made up by a smith who had made use of the dismantled parts of another scabbard. The way in which the upper edge of the lower plaque stops short of the bird-bridge would seem to reinforce this view, as does the fact that no advanced Middle La Tène sword from Switzerland bears such ornamental plaques. The chape and lower plaque would therefore belong to the earlier Standlake scabbard, whilst the upper, newer plaque (made, as Navarro noted, specially for the 'second edition') and the 'bird-bridge' were added when the scabbard was reconstituted at a time not earlier, in terms of La Tène itself, than later Middle La Tène. The way in which the pelta-and-loop motif fills the whole of the upper plaque is similar to the treatment of decorative motifs in the panels at the tops of scabbards of advanced Middle La Tène form at La Tène, for on earlier scabbards the motifs are symmetrically and antithetically disposed about the median rib. That an open chape of advanced Early La Tène form should still have been acceptable to a scabbard-smith at such a relatively late date is not so surprising in Britain, when it is considered that such chapes continued to be made and used by the northern Irish scabbard-smiths for several generations (cf. Jope 1961b: 79). However, the presence of a Swiss 'bird-bridge' on the Standlake scabbard is of great interest, since it suggests that at least one scabbard was imported into Britain from Switzerland in later Middle La Tène.

One other southern British sword-scabbard has an open chape of

advanced Early La Tène character: an iron example probably dredged up from the River Witham in 1787-8 (Petch 1958: 9, no. 11, Fig. 1). The design of the chape is very close to the northern Irish series, in particular to Lisnacrogher 2 which has the same kind of scabbard-tip (Jope 1955a: Fig. 1). The mouth of the Witham scabbard has not been preserved, but the elongated suspension-loop is similar to Early La Tène examples like that on a scabbard from Port, Canton Bern (Gross 1887: 23, 57, Pl. IV.1; de Navarro (1960: 94, n. 37) has indicated that this scabbard was not found at La Tène as was claimed by Gross).

#### 13.4. Scabbard plate from the River Trent at Sutton

The bronze front-plate of a scabbard dredged from the River Trent at Sutton (No. 282) is unique in the British series in several respects. No other British scabbard has the triangular mouth, although something approaching it is seen on an Early La Tène dagger from the River Thames at Hammersmith (Jope 1961a: Pl. XXI.D), or the same layout of ornament, or the incised laddering, although this feature is also seen on the blade of an incomplete Early La Tène sword from Walthamstow (de Navarro 1966: 147, Abb. 1.2). The scabbard-plate has a Middle La Tène outline, although its original shape may have been different, since the truncated engraved scroll close to the tip indicates that the piece has been trimmed down to its present shape in a second phase of use. Another unusual feature for a British sword-scabbard is that the front-plate was not (at least in its

second phase of use) folded over the edges of the back-plate. Either the latter was folded over the edges of the former, or separately made edging held the two pieces together. The triangular mouth is also unusual on the Continent, but, as de Navarro (1966: 148) has pointed out, it occurs, for example, on a scabbard ornamented in the 'Hungarian Sword Style' from Jutas, Hungary (Hunyady 1942: Taf. XLV.5). As he also noted, the incised laddering is a rare technique mainly associated with Swiss swords and scabbards. The formalised foliate scroll ornament is related to that on the Torrs horns (Atkinson and Piggott 1955: Fig. 4, Pl. LXXXII), the northern Irish scabbard school ornament (Jope 1955a), and ultimately to the 'Hungarian Sword Style' (de Navarro 1966: 150). However, the antithetically symmetrical ornament set out on either side of the mid-rib at the top of the plate is reminiscent of a manner of ornamentation seen, for example, on Group A Middle La Tène scabbards from La Tène (cf. de Navarro 1960: Taf. 12-14, 16, 19). This eclecticism in design, coupled with the strongly British 'flavour', suggests that the piece was made in Britain.

#### 13.5. Sword and scabbard-locket from the River Witham (No. 285)

The shape of the blade and the mouth of the scabbard-locket indicate that this weapon is of Middle La Tène tradition. However, the sheet bronze locket with relief and engraved ornament is unique. Nothing like it has ever been found in Britain or on the continent.

True relief, worked up from the back in repoussé technique, is extremely rare on scabbards; another example is seen on an advanced Middle La Tène scabbard from the eponymous site (Jacobsthal 1944: no. 111). The relief ornament on the Early La Tène scabbard from Fillotrano (Ibid.: no. 103) is mostly 'false', since the design has been effected by deep punching along the outlines of the motifs. The style and technique of the engraved work on the scabbard-locket relate it to the bronze shield-mounts probably found at the same time and at the same place in 1826 (No. 322); the engraved work as well as the diagonal movement expressed in the relief design indicate that the piece must stand in the tradition of the 'Hungarian Sword Style', albeit in a much modified insular aspect. The first illustration of the Witham sword (Proc. Soc. Antiq. London, ser. 1, 2 (1849-53): 199, Fig.) shows that on discovery the chape was still present; the chape was lost between then and 1863, since it is absent on Jewitt's illustration (Kemble et al. 1863: Pl. XVIII.10). As Piggott (1950: 4) has pointed out, it appears to have had affinities with the chapes on the Bugthorpe and Grimthorpe scabbards (Ibid.: Figs 2.5 and 7.1); however, the smallness of the illustration and the evident incompleteness of the chape preclude certainty.

### 13.6. Chapes and scabbard-frames of Middle La Tène tradition

A few chapes and scabbard-frames have been discovered, that are more or less directly based on continental Middle La Tène models and that

show no sign of Late La Tène influence. Such pieces are known in both bronze and iron.

A simple type is represented by a chape of bronze from South Cadbury (No. 277) and by one of iron from Hunsbury (George 1917: Pl. 13.2); both are incomplete. An even simpler form from Maiden Castle (No. 272) cannot be closely paralleled either in Britain or on the Continent.

Six others, however, are more finely designed and bear features of some interest: Nos 264, 266, 268, 276, and 280-1. All were probably made for scabbards of wood or iron, for in no case has the main body of the scabbard survived; nevertheless, on discovery and during conservation, traces of the wooden scabbard could still be detected amongst the corrosion products on the blade of No. 268.

All six chapes are of cast bronze, and where they have survived the frames are of wrought sheet bronze; the stumps of the frame in the Islip chape are, however, of iron. Except for No. 280, the casting of the chapes was not wholly successful, for each one has a series of blow-holes on each side close to the junctions of the frames with the arms of the chapes. With the possible exception of No. 266 (which has rivets holding it onto the stumps of its frame), the chapes were cast onto the ends of the scabbard-frames; on No. 268 the casting-on did not succeed, for the joint had to be effected with the aid of rivets. With the exception of the chape on the all-bronze scabbard from Meare Heath (No. 273), chapes with blow-holes are restricted to

this group, which suggests that the smiths responsible were less skilled at this operation than those who cast the chapes onto the frames of the finer, all-metal scabbards; the joins on the latter are of such fine quality that they are frequently very difficult to detect with the naked eye.

These six chapes vary in form. The finer of the two from Spettisbury (No. 280) - with its bird-headed terminals at the top of the frame, the parallel-sided bridge at the back, and bulging chape with single mouldings at the tops of the chape-arms - stands closest to continental prototypes, in particular to de Navarro's Group B scabbards from La Tène (cf. de Navarro 1960: Taf. 5.3a and 4a, 10.4a and b, 23.2a). The other chapes may be divided into two groups, the first comprising Nos 266, 276 and 281, the second comprising Nos 264 and 268.

The chapes in the first group are of slender outline, with a swelling at the tip, and with simple but more or less well-defined mouldings at the tops of the arms; the lower edges of the bridges at the tops of Nos 276 and 281 are convex, a feature also shared by Nos 264 and 268. The inner edges of No 266 are pointed and almost meet just below the external mouldings. On the chapes of the second group the arms do meet at this point (but only at the back) to form a bridge enclosing an open area at the tip of the scabbard. These two chapes would therefore seem to be typologically

later than the others. However, it is of interest to note that at the top of the frames of these two specimens there is a pair of circular clamps - one on each side at the front - a feature that is found on some of de Navarro's Group A scabbards at La Tène (de Navarro 1960: Taf. 20.1a, 2a and 23.1a). De Navarro (1966: 148) has argued that this and other features can be used to suggest an early date in Middle La Tène, but only for the scabbards from La Tène itself; the 'typologically developed' chapes Nos 264 and 268 confirm this view. It is possible that the chape on the Grimthorpe scabbard (Piggott 1950: Fig. 7.1) was a later product of the same school that made Nos 264 and 268, for, although it is closer in design to these chapes than to others, its form is further removed from continental models.

Although the openwork scroll ornament on No. 268 is a unique example of scabbard-design, it is possible that the pattern was based on the kind of pattern that is exemplified by No. 282 and the Bugthorpe scabbard; all three, for example, have open circles scattered about within the scrolls themselves. Both No. 268 and the Bugthorpe scabbard have discs at the upper ends of frames, although on the latter scabbard the discs are attached to the front-plate rather than to the arms of the frame. Moreover, it may be noted that the arms of the chapes on both scabbards meet each other, even if the overall designs of the two differ in general design. The overall shape of the Bugthorpe chape resembles rather such pieces as



the chape from Houndslow, Berwickshire (Piggott 1950: Fig. 7.3).

### 13.7. All-metal scabbards of Middle La Tène tradition

This group comprises five complete, and one incomplete, scabbards and a fragment of a chape. (Nos 252, 263, 267, 271, 273-4 and 284). All but one of the scabbards were found in watery deposits and are therefore likely to have been votive offerings; the exception, from Hunsbury (No. 263), may have been found in a burial. The chape-fragment, No. 284, from Knowl Hill, Wargrave, was found on the site of a settlement. This is of some interest, since all the pieces discussed in the previous section (except No. 268, from the Thames at Little Wittenham) were found on the sites of settlements. Although it is true that deposition of a weapon in a burial, peat-bog, river, or the like, will favour survival of the piece in its original state, nevertheless, while settlement-sites have yielded numerous well-preserved weapons and weapon-fragments, they have yielded no scabbards made either totally or largely of bronze. This suggests that this kind of scabbard tended to be treated in a different and more special manner than the more commonplace scabbards. This contextual difference is not particularly surprising, for, although the skill involved in making a wooden scabbard of the kind discovered in Wheeler's excavations at Stanwick (Wheeler 1954: Pl. XXVI) is no mean one, the quality of workmanship seen on some of the all-bronze scabbards is of an extremely high standard.

The seven pieces that comprise this group, are all of 'Middle La Tène' tradition in general design; nevertheless, they all also show evidence of Late La Tène influence. The polythetic nature of the occurrence of attributes on these pieces makes sub-grouping difficult, but there are grounds for supposing that at least three workshops are represented. In only one feature, chape-design, can a typological series be detected, but this does not include all the scabbards; furthermore, it is unlikely that the typology has any absolute chronological significance, since the 'latest' in the series is on a scabbard that has other, 'early' features. The chape series - Meare Heath (No. 273), London (No. 271), and Amerden (No. 252) (to the last of which the fragment from Wargrave (No. 284) is very similar) - can be derived from chapes of the kind seen on de Navarro's Group A scabbards from La Tène (cf. de Navarro 1960: Taf. 5.1a). The development takes the form of a progressively further inward- and downward-curving of the tops of the arms of the chapes until they meet. That this development has no absolute chronological significance as far as these scabbards are concerned, is demonstrated by the fact that the 'latest' in the series (Amerden) has a suspension loop of Middle La Tène type (cf. Navarro 1960: Taf. 1.1b), whilst the 'earlier' scabbards from Meare Heath and London have suspension-loops of developed Late La Tène type. Similar suspension-loops occur on No. 267, formerly on No. 274, as the line of rivets running down its centre indicates, and on an iron scabbard-fragment from

Llyn Cerrig Bach (C. Fox 1947a: no. 8). This elongation of the lower staple of the suspension-loop is a British development of a feature seen on Late La Tène scabbards on the Continent, in particular in France (e.g. Déchelette 1913: Fig. 25.5, Pl. XXXVI.5; R.A. Smith 1925: Pl. IX.4; Moberg 1951: Figs 12-3; Lepage and Claisse 1967: Fig. 1b; Todorović 1968: Sl. 22.28; Bocquet 1970: Pl. 54. no. 899). On the Late La Tène tradition scabbards from Bardney and Battersea (Nos. 253-4), the lower staples have been lengthened so as to reach right down to the tip of the scabbard.

As was noted above, there are reasons for supposing that these all-metal scabbards of Middle La Tène tradition probably represent the products of at least three different workshops. Nos 263 and 273 form one group, Nos 267 and 271 another. No. 252 is sufficiently different from any of these to suggest that it was a product of a third workshop. It is possible that No. 284 was made in the same workshop as No. 252, but since so little of it has survived, it would be unwise to be categorical. Again, No. 274 is too incomplete for comparative purposes.

Nos 263 and 273 each have double mouldings at the tops of the chape-arms, mid-ribs on the front-plates, pairs of very similar separately-made 'fish-like' castings antithetically rivetted onto the front-plate either side of the mid-rib at the top of the scabbard-frame, concave lower edges to the bridges at the tops of the scabbard-frames, and incised ornament in the 'Mayer' style in panels at the top of the

front-plate. However, the form of the chapes and details of the design of the scabbard-frames differ. The broad cross-struts on the scabbard-frame of No. 263 are similar to those on the Grimthorpe scabbard (Piggott 1950: Fig. 7.1); such multi-bridged frames are a characteristic of Late La Tène scabbards (cf. No. 251), and are also seen on Nos 267 and 271. On the latter pair, however, as on most Late La Tène scabbards, the cross-struts are very slender; the cross-struts on No. 264 and on the Grimthorpe scabbard-frame are very broad by comparison.

Nos 267 and 271 share the following features: single mouldings at the tops of the chape-arms, Late La Tène scabbard-frames with slender cross-struts, no mid-ribs, concave-sided and convex-ended upper staples to the suspension loops, and separately-made discs (two on No. 267, three on No. 271) on the front-plate near the top, level with the suspension-loop on the back-plate. Like Nos 263 and 273, the chapes on these two scabbards are quite different, although, again, both are ultimately derived from continental Middle La Tène prototypes. The concave-sided and convex-ended upper staples to the suspension-loops on Nos 267 and 271 are very similar in concept to those on the Late La Tène scabbards from Bardney and Battersea (Nos 253-4); this is probably skeuomorphic of the back-to-back manner in which the horizontal binding-clamps close to the tops of certain continental Late La Tène scabbards are brought together either at the back or front of the scabbard; this device appears to be restricted to more easterly continental Late La Tène scabbards from southern Bavaria, Switzerland and the southern fringes of the Alps (cf.

Lindenschmidt 1870: Heft VII, Taf. 6.1a; Gross 1887: Pl. IV.6;

Ulrich 1914: Taf. LXXVIII.4; Stroh 1951: Abb. 1.3, left). The back-to-back double-C motif on the suspension loops of the scabbards from Barmpton ('Sadberge') and Mortonhall (Piggott 1950: Figs 9.2 and 3, 10.1) are perhaps also ultimately to be derived from the same source.

The Amerden scabbard (No. 252) has none of the distinctive features of the four scabbards discussed above; instead, it has several features unparalleled on any other British scabbard. The eclecticism of these features is typical of the British tradition; for example, the highly developed insular form of its chape as opposed to its very continental-looking Middle La Tène-type suspension-loop have already been commented upon above. The circular clamps that formerly held the ends of separately-made cross-struts on the reverse of the scabbard-frame are unique, as is the S-shaped appliqué rivetted onto the front-plate level with the top of the scabbard-frame. The pair of clamps cast onto the sides of the scabbard just above the top of the chape are most nearly paralleled on the Late La Tène scabbard from Abingdon (No. 251). The upper edge of the incised ornament on the hilt-guard echoes the high-peaked mouth of de Navarro's Group B scabbards at La Tène (de Navarro 1960: Taf. 1.1a, b). I know of only one other ornamented hilt-guard of this form; it occurs on a sword of advanced Middle La Tène form from Heiligstein near Speyer (Lindenschmidt 1870: Heft VII, Taf. 6. 3b; de Navarro (1960: 94, n. 34) has been shown that this sword was not found at the

cathedral in Speyer as was claimed by Lindenschmidt). De Navarro (1960: 109-10) has argued that the Heiligstein sword is of 'Late la Tène date. The incised asymmetric triskele-motif in the panel at the top of the front-plate of No. 252 is very reminiscent of the incised motifs at the tops of certain Middle la Tène scabbards of de Navarro's Group B at la Tène (cf. Vouga 1923: Pl. V).

Addendum: A bronze scabbard, discovered in the bed of the Thames at Henley (Oxon) late in 1971, has come too late to incorporate in the main discussion. Although it belongs to this group, various features, such as the chape and scabbard-frame, link it to Nos. 263 and 273 more closely than to the others.

### 13.8. Continental Late la Tène scabbards from Abingdon and Bourne End

The scabbard from the Abingdon reach of the River Thames (No. 251) and the fragment of another from Bourne End, Hemel Hempstead (No. 255) are more closely related to certain continental Late la Tène examples than to any other scabbard from Britain. Indeed, their relationship is so close to the former that they would not have seemed out of place if they had been found in western or central Europe. It seems quite likely, therefore, that they were either made there or made by immigrant craftsmen.

Close parallels are afforded by an iron scabbard from Grave 6 in the cemetery at Giubiasco, Canton Ticino (Ulrich 1914: 538, Taf. LXXXVI. 6), and by bronze scabbards from the River Thielle at Port, Canton Bern (Gross 1887: 57, Pl. IV.4), from a warrior-burial at

Trier-Olewig (Schindler 1971: 52-3, 59-61, Abb. 8, 9.1-3, and 10), and from an unknown location in France (Behrens 1937: 109, Abb. 1.2-2a; Schindler 1971: 59, Abb. 13). Like the Abingdon scabbard, each of them has a square mouth, parallel or near parallel sides along the upper part, converging sides in the section bordered by the scabbard-frame, a rounded tip, and a long scabbard-frame with narrow cross-struts. Of these continental weapons only the Giubiasco specimen is complete, the others being in varying states of preservation. The chape on No. 251 is most closely paralleled by that on the Giubiasco scabbard. These two weapons, as well as those from France and Trier-Olewig, have pairs of additional U-shaped clamps apparently added at a later date onto the sides of the scabbard-frame to give it further support.

The form of suspension plate on Nos. 251 and 255 is unparalleled in Britain, but is also to be found on certain Late la Tène scabbards on the Continent, for example, on those from France and Trier-Olewig mentioned above. (The form of the suspension plates on the Giubiasco and Port scabbards is not known to me, since they do not appear in the published illustrations.) Suspension-plates of the Abingdon type occur too on certain specimens of another kind of Late la Tène scabbard on the Continent, a type that I intend to designate after the scabbard found in enlarging the Rheinhafen at Ludwigshafen in 1886 (Engels 1970); other Ludwigshafen-type scabbards with the kind of suspension seen on the Abingdon scabbard have been found at Göppingen (Lindenschmidt 1870: Heft VII, Taf. VI.1; Bittel 1934: 23, no. 4, 77, Taf. 5.11), and

Waringenstadt, near Sigmaringen (Lindenschmidt 1900: Beilage zu Taf. 32. No. 6). Ludwigshafen-type scabbards were designed for swords with parallel or only very slightly converging cutting-edges and almost square tips. In most cases these scabbards have squared mouths, although a few have the ogival profile of Early-Middle la Tène tradition; however, whatever the form of the mouth each scabbard has (or had) a broad band at the top, of the kind seen on Nos. 251 and 255, and on the scabbard from Trier-Olewig. The form of the scabbard-frame closely resembles those found on scabbards of Abingdon type, except for one very distinctive feature: an oval area defined by pairs of inward-pointing projections from the two sides of the frame or by pairs of closely set cross-struts; this feature does not appear to occur on scabbards of the Abingdon type.

Besides the three specimens mentioned above, Ludwigshafen-type scabbards have been found at Châlons-sur-Saône (Déchelette 1913: 175-6, Fig. 25.5, Pl. XXXVI.5), Giubiasco Grave 96 (Ulrich 1914: Taf. LXXVIII.4), the Illerkanal, near Ulm (Pressmar 1938: Abb. 34; Stroh 1951: 146, n. 4), Manching (Stroh 1951: 146, Nr. 24, Abb. 1.4; Torbrügge and Uenze 1968: Abb 183), the San Bernardo cemetery at Ornavasso (Bianchetti 1895: Tav. V.7), Port (Gross 1887: 57, Pl. IV.6, 8), and Regensburg (Stroh 1951: 144, Nr. 5, 146, Nr. 23, Abb. 1.2-3). The chape of an iron scabbard of this type has also been found at the Celtic oppidum of Sainte-Blandine, Vienne (Chapotat 1970: 48-9, Fig. 11, Pl. I.5). These scabbards, together with those of Abingdon type, are plotted on Map 22; but I do not claim that the lists represent anything more than those pieces that are



known to me.

Immediately above and below the suspension loops on the scabbards from Ludwigshafen and Trier-Olewig are simply ornamented narrow binding-clamps. Similar clamps were affixed to Nos. 251 and 255 in precisely the same positions; however, on No. 251 the upper clamp has been moved from its original position, whilst the other clamp is now missing, its former presence marked by differential corrosion. Both clamps are missing from No. 255, their former presence also indicated by differential corrosion of the scabbard's surface.

The forms of the cross-struts on the frame of the Abingdon scabbard are paralleled on several continental scabbards. The lowermost strut on the reverse of the scabbard is exactly matched by the strut close to the tip of the reverse of the Trier-Olewig scabbard. The second strut up from the tip of the Abingdon scabbard is paralleled on Ludwigshafen-type scabbards from Port (Gross 1887: Pl. IV.8) and Regensburg (Stroh 1951: Abb. 1.3) and on the Abingdon-type scabbard from Port (Gross 1887: Pl. IV.4). The double-S strut with central knob on the front of the scabbard may be compared with almost identical struts on the scabbard from Ludwigshafen. Struts with modeled esses of the kind seen on these two scabbards are quite a common feature of Late Iron Age scabbard-design; variations on this theme may be observed on scabbards from Dobrosloveni-Romanati, Romania (Nicolăescu-Plopșor 1948: 23, Pl. V.12 = Todorović 1968: Sl. 26.2, where it is incorrectly stated to have been found at Silivas), Regensburg (Stroh 1951: Abb. 1.2), the Rhine at Amerongen in

the Netherlands (Braat 1967: 61, no. 9, Pl. V.3), and Roje, Slovenia (Jacobsthal 1944: no. 114).

An interesting feature of the Abingdon scabbard is that the 'reverse' is more profusely ornamented than the 'obverse'. On continental scabbards of Middle la Tène tradition the face with the suspension-loop is generally far plainer than the other, and it has therefore been inferred, with good reason, that the suspension loop was on the face that was not intended to be seen when hitched up in its harness. However, on several Late la Tène scabbards, for example, those from Ludwigshafen, Manching and Regensburg, the converse is true. In this connection, it is interesting to note that the two British scabbards of Middle la Tène tradition that show the most pronounced signs of influence from Late la Tène scabbard-design, Nos. 267 and 271, are also more profusely ornamented on the face that bears the suspension-loop. However, although Piggott's Group IV scabbards are also more profusely ornamented on the face with the suspension-loop, the two Late la Tène tradition scabbards from Bardney and Battersea (Nos. 253-4), discussed below in Chapter 13.9, follow the Middle la Tène tradition in this respect.

Typologically, it could be argued that the Abingdon type of scabbard is transitional between Middle la Tène weapons and Late la Tène scabbards of Ludwigshafen type, for although similar in design to the latter the kind of sword for which the Abingdon type was intended is closely akin to the former type. However, it is equally likely that scabbards of Abingdon type were first made only after the Ludwigshafen

type had been developed. Chronologically, it is impossible to distinguish between the two types. The situation is made difficult by the fact that only three scabbards have been found in archaeological contexts: two from Giubiasco, and one from Trier-Olewig. The Abingdon-type scabbard from Grave 6 at Giubiasco was associated with, inter alia, a ceramic handled flagon (Ulrich 1914: 538, Taf. LXXII. 12) of a type that has been assigned to the Augusto-Tiberian period (Crivelli 1958: 56, Fig. 1.12), and fragments of an iron shield-boss mount of the hump-backed bandformig type (Ulrich 1914: 538). The Ludwigshafen-type scabbard from Grave 96 at Giubiasco was associated with several objects (Ibid.: 573-5) including a conical shield-boss, a bronze jug of Kelheim type, and a pan of Aylesford type; the dating of these kinds of bronze vessels has been considered by J. Werner (1954: 46-54). The Abingdon-type scabbard from Trier-Olewig came from a grave which also contained fragments of a bronze helmet and several locally-made pots (Schindler 1971: 47-63). The pottery is akin to that found in Haffner's Horizons 3 and 4 of the Later la Tène culture of the Trier region, which Haffner (1969: 240-3, Abb. 2) correlates with Krämer's D1 phase of the la Tène sequence in southern Bavaria (Krämer 1962: 307-17, Abb. 1). Chronologically, the contexts of the Giubiasco and Trier-Olewig scabbards cannot be distinguished. It is impossible on present evidence, therefore, to determine whether 'Abingdon' or 'Ludwigshafen' scabbards were the first to be made.

### 13.9. Late la Tène scabbards from Bardney and Battersea (Nos. 253-4)

Two sword-scabbards, each with its sword rusted inside, from the Bardney reach of the Lincolnshire River Witham and from the Battersea reach of the River Thames, whilst also of Late la Tène tradition, are, however, more clearly of British design and manufacture. The closeness of design between these two pieces suggests that they were both products of the same workshop-tradition. While both of them have rounded tips and squared mouths, they also taper gradually throughout their whole length, a feature not found on continental Late la Tène swords but seen in Britain on certain swords of Middle la Tène tradition (e.g. No. 267, from Lakenheath); the Late la Tène swords from Owslebury (Collis 1968: 25, Pl. IXb) and St. Lawrence (Stead 1969: Fig. 2.1) are also tapered. Neither the Bardney nor the Battersea scabbard has (or had) a frame above the chape. Both have three horizontal binding-clamps, one at the mouth, the other two respectively immediately above and below the suspension-loop; on both scabbards the distance between the latter two clamps is less than the distance between the middle and top clamps. The number and arrangement of these clamps is similar to those on the Middle to Late la Tène scabbards of Abingdon and Ludwigshafen types, and on those from Corlate, Romania (Nicolăescu-Plopşor 1948: Pl. II.1; Todorović 1968: Sl. 30), and Corroy, Marne (R.A. Smith 1925: Pl. IX.5). It is of interest in this connection that the Corlate scabbard was found in a grave with a Middle la Tène bandförmig shield-boss and a brooch of Hodson's Munsingen Type 73

(Hodson 1968: 31.89.611), and that the maker of the Corroy scabbard may well have been influenced by developments further east, since the primary area of distribution of scabbards with this kind of chape appears to be along the southern and south-eastern fringes and to the south-east of the Alps (cf. Bianchetti 1895: Tav. V.4, from Tomb 1 in the San Bernardo cemetery at Ornavasso; Todorovic 1968: Sl. 16, Tab. XXXIII.5, illustrates several examples from Yugoslavia). On the front of the Bardney and Battersea scabbards the clamps are skilfully modelled, but in different ways; the triple-disc arrangement of the lower pair on the Battersea scabbard is somewhat reminiscent of the binding-clamps on certain Middle la Tène scabbards from la Tène (e.g. de Navarro 1960: Taf. 1.3a, 4.1a, 17.5, 20.1a), though on the latter the outer discs are larger, instead of smaller, than the central one. The back-to-back double-C modelling of the upper staples of the suspension-loops on the Bardney and Battersea scabbards (similar motifs are also incised between the clamps on the front-plate of the Bardney scabbard) is similar to the upper staples on the Lakenheath and London scabbards (Nos. 267 and 271). As noted above, this feature is probably derived from the design of the clamps on certain Late la Tène scabbards on the Continent. On both the Bardney and the Battersea scabbards the lower staple of the suspension-loop has been considerably lengthened and extends almost to the tip of the scabbard; the lengthening of this staple, though never hitherto to such an extent, has already been noted on the all-metal scabbards of Middle

la Tène tradition from Lakenheath, London, Meare Heath and Mortlake-Brentford, and on certain continental, particularly French, scabbards of Late la Tène date. However, an elongated staple of the Bardney-Battersea type appears to ornament a Late la Tène scabbard from Sofia, Bulgaria (Todorović 1968: Sl. 25.7).

#### 13.10. 'Hod Hill' sword-hilts

An iron sword from Hod Hill (No. 289), though incomplete, is clearly of Late la Tène tradition, and preserves all its hilt-mounts and enables a reasonable reconstruction of the original shape of the hilt to be attempted. The cruciform bronze mount at the end of the hilt once clasped a rounded cushion-like pommel. Below it are five oval bronze pieces threaded at intervals onto the tang to act as decorative pieces between the several organic parts of the hilt; four of the hilt-mounts are of the same diameter, whilst the fifth, set halfway down the hilt, has a swelling bulge. The guard-mount partly framed an oval guard, probably rounded at the top, like the guards on the Cotterdale and Embleton swords (Piggott 1950: Figs. 9.2D and 10.2C), and flat at the bottom, flush, with a squared mouth of the scabbard. The squared mouth of the scabbard and the broadness of the surviving portion of the blade suggest that the sword was of the round-tipped Late la Tène type.

A similar but less complete hilt - lacking in guard-mount - is all that remains of a sword recovered from a burial at Bradford Peverel, also in Dorset (No. 286). It, too, has a cruciform mount to clasp an oval cushion-like pommel, and three largish oval bronze mounts;

however, unlike the Hod Hill mounts, these are provided with rims for clasping the hilt itself - though the end-mounts are only slightly hollowed at their outer faces. There can be little doubt that this sword had a hilt-guard of the Hod Hill type. Four other guards of this kind have been found in Dorset, three at Hod Hill (Nos. 290-2) and one at Waddon Hill (No. 297); a fifth comes from Farley Heath in Surrey (No. 288). Several more have been found in northern England and southern Scotland (Piggott 1950: 20-1, Figs. 9.2D, 10.4, 5, and 12, Group IVB). As Piggott has noted (Ibid.), the two markedly separated groups in the distribution of this type of guard are difficult to explain; the same distributional pattern is seen with the more simplified kind of guard exemplified on the sword-fragment from Bulbury (No. 287), for which the best parallel comes from Barmpton ('Sadberge'), Co. Durham (Piggott 1950: Fig. 11.2); a sword from Fendoch has a similar guard (Ibid.: Fig. 11.4). A close analogy for the Bulbury-Barmpton kind of guard is provided by an early find from Manching (Weber 1907: Abb. 2). Both the Bulbury and Hod Hill guard-forms, while designed for square-mouthed scabbards, preserve the ogival profile of Early to Middle la Tène scabbard-mouths.

A cruciform pommel-mount of the Bulbury-Hod Hill form has also been found in the recent excavations at South Cadbury Castle (No. 296); another cruciform pommel-mount, but of a different kind, was found at Llyn Cerrig Bach (No. 294). Yet another kind of cruciform pommel-mount clasped the pommel of the Cotterdale sword (Piggott 1950: Fig. 9.2D), but appears to have been set the other way up on the end

of the hilt. It was designed for a kind of pommel that was probably based upon a Roman model, as Franks (1880: 251, Fig.) presciently noted. The ribbed grip itself is also in imitation of Roman design (Ibid.) Indeed, the overall designs of such Roman sword-handles of the mid-first century A. D. as the one already referred to and one from Rheingönheim (Ulbert 1969: Taf. 32.1, 4) are extremely close to the native sword-hilts of the forms represented by finds from Cotterdale, Embleton, Hod Hill, Thorpe and Worton (Smith 1925: Fig. 117; Piggott 1950: Figs. 9.2D, 10.2C, 3).

Further examples of plain bronze hilt-rings of the kind seen on the Hod Hill sword (No. 289) have been found at Hod Hill (No. 293), Maiden Castle (Wheeler 1943: Fig. 90.2, 3, Pl. XXX.A.2, 3), and South Cadbury Castle (No. 295).

### 13.11. Late la Tène chapes

Eight bronze chapes, designed for swords of Late la Tène tradition, have been found in a restricted area of southern England, in Dorset and Somerset: four from Hod Hill (Nos. 261-2), two from South Cadbury Castle (Nos. 278-9), and one each from the Bulbury and Polden Hill hoards (Nos. 256 and 275). Three varieties may be distinguished: the truly semi-circular with a separately made cross-strut rivetted at either end across the back at the top (Nos. 261 and 279), the U-shaped (Nos. 256 and 278), and an intermediate, more open form (Nos. 262 and 275). No. 275 has a double-pointed moulding on the inner edge at the base at the front, that is similar to a moulding in the same position on



the U-shaped chape from South Cadbury Castle (No. 278).

None of these chapes has yet been found with a sword or scabbard. However, in view of the fact that distribution almost completely matches that of the 'Hod Hill' hilts discussed above, it is, perhaps, not unreasonable to suggest that the chapes and hilts were designed for the same weapons.

### 13.12. Miscellaneous scabbard-mounts.

Eight objects remain to be considered. Seven probably served as ornamental bronze mounts for wooden scabbards. Nos. 258, 269 and 283 were probably affixed to the mouths of scabbards of Late la Tène tradition, since they are all squared. There is little in common between the three objects save that there is a rounded pendant on one face only, which was presumably fitted to the front-plate of each scabbard. Four other objects (Nos. 257, 259-60 and 270) are more pedestrian pieces and may have bound almost any part of a scabbard.

The final piece (Nos. 265) is a unique suspension-loop; the absence of rivets indicates that it was never used. The sharply truncated ends of the staples suggest that further strips were intended to join onto the ends. If so, then it is likely that the suspension-loop was intended for a scabbard of Piggott's Group IV (1950: 17-21, Figs. 9 and 10.1, 2), on which the loops were placed half-way down the back, or for a scabbard of Bardney-Battersea type.

## 14. Dagger-scabbards (Nos 298-302)

### 14.1. Introduction

The daggers of the whole of the British pre-Roman Iron Age have been the subject of two important studies published within the past fifteen years (R.R. Clarke and Hawkes 1955; Jope 1961a). In the present discussion the primary concern is with those of late pre-Roman Iron Age date that have been found in southern Britain and that have bronze hilt-mounts and/or bronze scabbards or scabbard-fittings. Five such pieces are considered here and listed in the Catalogue (Nos 298-302); whilst the late pre-Roman Iron Age date of Nos 299-302 is reasonably certain, the attribution of No. 298 to this period is by no means so sure. Indeed, in view of the uniqueness of its form, and in view of the lack of features diagnostic, rather than characteristic, of this period, I do not intend to discuss it further.

### 14.2. Two knife-dagger scabbards (Nos 300-301)

Two small all-bronze scabbards appear to have been designed for single-edged blades, since they have asymmetric outlines. Each is made of two plates of sheet bronze, one folded over the sides of the other. On both the suspension loop is on the plate, whose sides were folded over the other. However, the forms of the suspension-loops differ; that on No. 300 is of the same kind that is seen on many of the sword-scabbards, while that on No. 301 is unique in the British scabbard-series in that it rises above the mouth of the scabbard. At the tip of No. 300 there is a spherical knob which may be paralleled on No. 299. Knobbed chapes are

not a feature of La Tène scabbard design, but are commonly found on early Roman dagger-scabbards (Brailsford 1962: Fig. 1, A8, A14). Whilst the scabbard of a Breton anthropoid-hilted dagger also has a chape in the form of a knob, it seems likely that this, like other features of the scabbard, was modelled on Roman dagger-design (R.R. Clarke and Hawkes 1955: 215, 224, no. 30, Fig. 6.9, Pl. XXVII.6).

#### 14.3. Dagger-scabbard from the River Witham (No. 302)

In this section I intend merely to discuss the design of the scabbard of the new lost dagger from the River Witham; the form of the hilt will be considered in the next section.

Unlike the scabbards discussed in the previous section, the scabbard of the Witham dagger is closely related to British late pre-Roman Iron Age sword-scabbard design. This is most evident in the form of the chape and scabbard-frame. It seems very likely, on analogy with the sword-scabbards, that the former was cast onto the latter. The former may be compared with such sword-scabbard-chapes as Nos 266 and 281, both of which stand in the mainstream of the British development of Middle La Tène chape-designs (see Chapter 13.6). The bridge at the top of the scabbard-frame is of some interest. It is unique, for it is integral with only one of the pieces of the edging, being folded over the other. Whilst the bridge is parallel-sided like that on No. 280, a curved incised line recalls the concave lower edge of the bridge on No. 263. The small circular stud on the back-plate immediately below the bridge on No. 302 can also be paralleled on sword-scabbards, as on Nos 252 and 267. The pairs of ornamental discs on No. 302 may be

compared with discs in these positions on No. 267; the designs of these discs (a circular ridge surrounding three riveted-on [missing but probably lanceolate] studs) may also be paralleled on No. 267, as well as another weapon dredged from the River Witham, the Witham shield (No. 322).

The mid-rib on the front-plate of the dagger-scabbard may be compared with those on Nos 263 and 273. In sum, the scabbard of No. 302 is closely related to British sword-scabbard design of Middle La Tène tradition.

#### 14.4. The 'anthropoid' hilts of Nos 299 and 302

Both Nos 299 and 302 were provided with bronze hilts of the 'anthropoid' kind. Such hilts are common throughout the La Tène Iron Age right across Europe. In his detailed study of weapons with this kind of hilt, Hawkes (in R.R. Clarke and Hawkes 1955: 205-17) distinguished seven classes; both Nos 299 and 302 were assigned to his Class G, a group restricted in distribution to England and France.

It is of interest to see how Hawkes built up his classification; on this he was not altogether explicit, despite the fact that he gave short definitions for each of his classes. Apart from his very distinctive class C, it is clear that the definition was built up as follows: first, the hilts were divided according to the form of the grip itself into three groups comprising respectively Classes A and B, D and E, and F and G. Each group was then sub-divided into two Classes according to the degree to which the 'head' protruded from the angle subtended by the pair of arms at the upper end of the hilt. It is quite clear that Hawkes took no account of the forms of the 'arms' and 'legs', nor of the form of the knob or head in the angle

subtended by the pair of 'arms', nor of the shape of the mouth of the scabbard. In fact, it is clear that the grouping is primarily typological, developing from hilts with plain straight grips (Class A) to those with a pronounced moulding on the grip (Classes D and E) and finally to those with three or more mouldings on the grip (Classes F and G). The evidence upon which the chronology was built up, is far from satisfactory, since so few of the weapons have been found with other closely datable objects. In terms of the generally accepted Tischler - Reinecke model of cultural change in the La Tène Iron Age, it does seem that there is a certain amount of evidence to support Hawkes' typology in the sense that the initial manufacture of Class A hilts is likely to have been earlier than that of Classes D-G. However, the possibility cannot be excluded that such plain hilts as that on the weapon from Shouldham in Norfolk continued to be made right down to the end of the pre-Roman Iron Age. It seems to me that a new analysis is needed of all these weapons, an analysis that, unlike Hawkes', takes account of all the features of hilt-design in the primary definition.

Although the grip of No. 299 is provided with a series of spacer-plates, it seems likely that the outline was a continuous curve and not a series of mouldings. If the outline was smooth and not broken, then, in terms of Hawkes' classification, the weapon should belong not to Class G but to Class B. In other respects this hilt compares as closely to Class B weapons as it does to those of Class G. Moreover, although Hawkes also assigned No. 302 to his Class G (as a 'variant'), it is clear that the distinction between Classes F and G is not satisfactory. The feature that

distinguishes these two classes is the degree to which the terminal moulding protrudes above the upper pair of arms: in Class F the 'head' is sunken, while in Class G it is 'projecting'. However, it is clear that there is a continuous range from really 'sunken' heads (as on Hawkes' no. 27) through the half-sunken (as on Hawkes' no. 44), to the 'projecting' (as on Hawkes' no. 28). The figure seated between the arms of No. 302 is unique, for on no other hilt is more than the head and neck delineated. It is, therefore, doubtful whether the hilt-design can be classified according to the criteria defined by Hawkes for distinguishing Class F hilts from those of Class G.

15. Spearhead from the River Thames at London (No. 303)

The ceremonial iron spearhead from the River Thames at London appears to be unique, for I know of no other iron spearhead of pre-Roman date in Europe, that has ornamental bronze plates attached to its blade. Although other pre-Roman Iron Age spearheads are ornamented, the ornament has generally been effected by modifying the outline of the blade and/or by piercing the blade (cf. Vouga 1923: Pls XI and XII; Chevallier 1956); a few others have incised ornament (cf. Inventaria Archaeologica. Pologne, Fasc. IX (Łodz and Warsaw, 1963): Pl. 51 (2). 5).

The Polish spearhead (Ibid.) is of some interest, since its shape is very similar to that of No. 303. However, the absence of a classification of the pre-Roman iron spearheads of both Britain and the Continent prevents one from determining the date of No. 303 other than from analysis of the style of its ornamental bronze plates. An indication of the variety of spearhead-forms in the pre-Roman Iron Age is given by those found at La Tène (Vouga 1923: Pls IX-XIV) and at Llyn Cerrig Bach (C. Fox 1947a: Pl. XXXV); however, none of these forms is close to No. 303. The massiveness of the Thames spearhead suggests that the spear which it originally tipped, was used for thrusting rather than for throwing (C. B. Sale: pers. comm.).

The attachment by rivets of wrought sheet bronze plates to an iron backing is not a common technique in the southern British later pre-Roman Iron Age; nevertheless, the technique may also be observed on the Standlake scabbard (C. Fox 1958: Pl. 22a) and on the scabbard-locket from the River Witham (No. 285).

16. Helmet from the River Thames at Waterloo Bridge (No. 304)

Little can be said of the form of the presumptively ceremonial wrought bronze helmet from the River Thames at Waterloo Bridge, for it is unique. Of the many forms of helmets made in Europe in La Tène times (Ritchie 1968), hardly any have horns, and of those that do none is closely comparable with No. 304. All the other horned helmets have curved horns; even these are only known from contemporary reliefs, for example, on the Gundestrup cauldron (Klindt-Jensen 1961; plates C and E, top register), on the Tiberian triumphal arch at Orange (Déchelette 1927: 663, Fig. 484; Amy et al. 1962: Pl. 43.II.a-e), and on a sculptured relief from La Brague (Déchelette 1927: 663, Fig. 485).

The technique of manufacture of the horns on No. 304 may be paralleled on the pair of horns from Torrs (Atkinson and Piggott 1955: 202-3), which have not only rivetted seams but also terminals cast in position. The technique of rivetting the seams may also be seen on the trumpet-fragment in the Llyn Cerrig Bach deposit (C. Fox 1947a: no. 74). This method of making a tube of sheet bronze contrasts with the technique of soldering used on the now lost carnyx tube from the Tattershall Ferry reach of the River Witham, Lincolnshire (Piggott 1959b: 20); it is interesting that the joint of the only other known part of a carnyx tube, the fragment from the late La Tène hoard at Kappel, should also have been soldered rather than rivetted (Fischer 1959: 21-2, Nr. 1, Taf. 2 and 25). The closest parallel to the ornamental strips masking the joints on No. 304 is a (now lost) knobbed strip of bronze from the Bredon Hill hillfort, Gloucestershire (T.C. Hencken 1939: Fig. 4.11).



As I have noted in the Catalogue entry, No. 304 was extensively repaired in antiquity. Despite them the helmet has a remarkably botched appearance: the knobbed strip-mouldings overlie parts of the relief ornament, while the crescentic strip at the base of the back of the helmet spoils the balance of the ornamentation of the principal rear sheet. It seems probable that the helmet was completely dismantled and re-assembled in antiquity, the principal rear-sheet in particular being trimmed down, possibly because it had been badly damaged at the base, and the crescentic strip was added as a repair. I think it possible that the crescentic strip, far from being a mere repair cannibalised, perhaps, from some other object, may actually have once been integral with the principal rear-sheet of the helmet, but the other way up and bent outwards as a neck-guard. Whilst this interpretation can be no more than hypothetical, we may note that the lower edge of the crescent is considerably battered, such as might have occurred if it had been torn off another object. We may note, too, how close in technique and style its ornamentation is to that of the other two sheets that comprise the cap of the helmet. Moreover, the crescentic outline is precisely that of neck-guards on most other *la Tène* helmets (Jacobsthal 1944: Pls 75-89; Brailsford 1953: Pl. XVIII.2). I include a conjectural reconstruction of the helmet in its putative original state.

## 17. Shields (Nos 305-332)

### 17.1. Introduction

Whilst no pre-Roman Iron Age shield has survived intact in any part of Britain, unlike in mainland Europe, several examples are represented by their metal fittings. Both bronze and iron metal shield-fittings have been recorded in southern Britain; although only the former are listed in the Catalogue (Nos 305-29), both kinds are considered here.

In the following discussion, the more general aspects of shield-design are considered first, and then the various groups that can be discerned from the different forms of shield-boss mounts. Finally, the construction of the shields is discussed.

### 17.2. Shield-design

As noted above, no late pre-Roman Iron Age shield has yet been discovered intact in southern Britain. However, their outlines have been preserved in two instances (Nos 305 and 322) by the surviving metal fittings. Additional information concerning their outlines is provided by five miniature models (Nos 330-2).

The outlines of Nos 305 and 322 are unique in La Tène Europe, for, whilst they are long like the normal continental shield (cf. Vouga 1923: Pls XVI.10, XVII and XVIII; Rosenberg 1937: Figs. 29-32), their sides are curved inwards. The outlines of the miniatures are more 'normal': Nos 330-1 are near-elliptical like at least one of the shields from La Tène (Vouga 1923: Pl. XVI.10) and like others depicted on Classical reliefs (Ritchie 1969: Fig. 1.1-3). Whilst the outline of No. 332C is uncertain,

No. 332B appears to have been parallel-sided and to have had rounded ends; the latter shape is also known in continental contexts (Kimmig 1940). The hexagonal outline seen on No. 332A was also a common shape on the Continent (Amy et al. 1962: Pl. 46. nos 75, 79 and 80). As is argued below in section 17.5, it is possible that the unique incurved outlines of Nos 305 and 322 had structural causes. On the other hand, it is equally possible that the markedly incurved outline of No. 305 was based on that of the ceremonial ancilia of the Salian priests at Rome (Bloch 1960: 135-40, Fig. 20).

In the recent remounting of Nos 305 and 322, P. Shorer (pers. comm.) has observed that the sheets would only have fitted tightly if they had been mounted on a slightly convex surface. The convexity is much more marked on No. 322 than on No. 305; on both shields this feature only occurs in the transverse section. It is interesting to note that the profiles of Nos 306 and 321 also indicate that they were once attached to shields with convex surfaces. Since all those continental La Tène shields that have survived are flat, this convexity of surface is either a British innovation, perhaps, as is argued below (Chapter 17.5), caused by the method of their manufacture, or is due to Roman influence. Many Roman long shields had convex surfaces of this kind (cf. Amy et al. 1962: Pl. 46. nos 54 and 59).

The shield of Early and Middle La Tène tradition had an oval spindle-like boss (with or without a rib extending from either end) along the central longitudinal axis (Vouga 1923: Pl. XVII). The boss covered the handle at the back. The axis of the handle was always transverse to that of the shield so that the upper part of the shield protected the arm of the holder

(Amy et al. 1962: Pl. 11. nos 72, 75 and 78, and Pl. 48. bottom row).

Later on, circular bosses were introduced, although as the Orange friezes indicate (Ibid.: Pl. 11), the old spindle-type of boss continued to be used.

In the following two sections (17.3 and 17.4), the British metal shield-mounts will be considered in terms of the kind of boss with which their shields were once fitted. The continental backgrounds of these forms will also be indicated.

### 17.3. Mounts from shields with spindle-bosses

#### 17.3.1. Continental background

Although shields with spindle-bosses are known in Italy from at least the seventh century B.C. (Jope 1971a: 61), and although some Italic shields had metal fittings as early as the fifth century B.C. (Ibid.: 62, no. 9), the earliest shields with metal fittings in 'Celtic' Europe occur in the latter part of Reinecke's La Tène phase B and in phase C (Krämer 1950). The earliest La Tène metal mounts are of two kinds: those comprising a pair of rectangular iron plates fitted onto the central part of the wooden boss on either side (Klindt-Jensen 1950: 46-7, Type IIb; Krämer 1950: 357-9, Abb. 4), and rimless iron bosses of lanceolate outline (Klindt-Jensen 1950: 46-7, Type IIa; Krämer 1950: Abb. 3). The latter form differs from the mainstream of spindle-bossed shields, in that there is no provision for a central spine above and below the boss.

Characteristic of the shields of La Tène C and II groups is the strip of metal with squared or ornamental ends, that was bent over the boss like a hump-backed bridge (Jahn 1916: Abb. 21, 40-2 and 47-50; Klindt-Jensen

1950: 46, Type I). Sometimes, the part of the strip that is actually in contact with the boss, is curved at the points at which it 'lifts off' from the surface of the shield itself (Klindt-Jensen 1950: 46, Type Ib); on many others, however, this angle between the flat and the upward-curving parts of the strip is delineated by a straight line (Ibid.: Type Ia). Although these 'hump-backed' mounts first appear in Middle La Tène contexts, as in Grave 26 at Vevey in Switzerland (Naef 1903: Pl. IV), they are also found in later contexts, for example, on the triumphal arch at Orange (Amy et al. 1962: Pl. 47.VI). Whilst most of these 'hump-backed' strips are of iron, a variant form appears in equal numbers in bronze or iron. The form has pelta-shaped terminals and is apparently restricted to the southern fringes of the Alps in northern Italy and Slovenia (Montelius 1895: 324, Pl. 64.3; Callegari 1941: 145-6, 153, Tombs 2-3, Figs. 3 and 9; Hunyady 1942: Taf. XLIX.3; Klindt-Jensen 1950: 47, Type Ic); associated finds at Arquà Petrarca (Callegari 1941) indicate that these bosses were made in Late La Tène times. Both Klindt-Jensen's Types Ib and Ic 'hump-backed' forms are of importance for the British series.

Only one possible instance of a boss of Klindt-Jensen's Type II has been recorded in Britain: a rectangular plate of iron, with rivet-holes at each corner and of concavo-convex transverse section, from the ditch of a barrow on Woolley Down in Berkshire (Peake and Padel 1934: Pl. II. Fig. 1a). The plate is similar to half of one of Klindt-Jensen's Type IIb boss-mounts. The context of this plate suggests that it might have belonged to a disturbed burial, since nearby were found two socketed iron spearheads (Ibid.:

Pl. II. Fig. 1b, c) and a fragmentary iron scabbard-frame apparently of Middle La Tène design (Ibid.: 35, Fig. 7; J. Close-Brooks (pers. comm.) tells me that this drawing is incorrect, for the chape is not of the form indicated but closer to a Middle La Tène form).

Another kind of metal fitting in the spindle-boss tradition is the all-metal boss with narrow flanges at either side following the outline of the boss. Whilst all-metal bosses of different forms have been found in earlier contexts (Klindt-Jensen 1950: 46-7, Type IIa; 1953: Fig. 22a; Jope 1971a: 62, no. 9), this particular form does not appear on the Continent before Augustan times. It is depicted on the triumphal arch at Orange (Amy et al. 1962: Pls 11 and 46, No. 78), whereas actual examples have been found in early first century A.D. burials at Mainz (Lindenschmidt 1899: 400, Taf. 7, No. 8) and Mainz-Weisenau (Lindenschmidt 1897: 348, Taf. 18, No. 6; Behrens 1934: Abb. 23.4), and in a Roman Iron Age burial at Dobřichov-Třebická in Bohemia (Stocký 1933: Pl. XLV.2, 4, where it is illustrated in two halves). A British version of this kind of shield-boss is found on Nos 320 and 322.

### 17.3.2. British shields with boss-covers derived from continental 'hump-backed' forms.

Six southern British shields (Nos 308, 310-11, 317-9) have come to light, that have thin sheet bronze boss-mounts derived from continental 'hump-backed' forms. No shield with mounts of this kind has yet been found in northern Britain. Whilst Nos 308, 310-11, and 317-9 all differ from continental specimens, no two of these six British shields appear to have had

identical kinds of ornamental mounts.

In transverse profile, the boss-mounts from Llyn Cerrig Bach (No. 308), and Moel Hiraddug (No. 310) and the complete example from Tal-y-Llyn (No. 318) stand close to continental prototypes, for the curve is continuous, but No. 317 rises up in a slight cone at the centre. Whilst the original profile of No. 319 cannot now be reconstructed with certainty but is likely to have been similar to No. 318, a tall cone with concave sides rises up from the centre of No. 311. It seems likely that this feature of No. 311 was derived from a kind of circular boss, the Stangenbuckel, current on the Continent during the late pre-Roman and Roman Iron Ages (Jahn 1916: Abb. 176, 199, and 202, Taf. III.4a, 6, 7a-b). The slightly conical profile of No. 317 may likewise have been modelled on round bosses with a less pronounced but still conical profile, like Nos 320A-C and the iron boss from Snailwell, Cambridgeshire (Lethbridge 1954: 32, Pl. Vc).

Whilst the form of the side-wings on No. 317 cannot now be reconstructed, it originally possessed a pair of upturned curved flaps on the upper and lower edges, a feature shared by No. 311. I have been unable to find a continental parallel for this. Whereas the splayed trapezoidal wings on No. 311 can be matched on the Continent (Jahn 1916: Abb. 41-2), the pair of separately-made tapered trapezoidal wings on No. 319 is unique.

Separately-made wings are also found on Nos 310 and 318, where they are pelta-shaped. C. Fox (1947a: 10), followed by Lynch (1970: 257, Fig. 83), has suggested that No. 308 may also have been provided with separately-made pelta-shaped plaques. The two pelta-shaped plaques from the first

Tal-y-Llyn shield (No. 310) are ornamented with engraved triskele-roundels, whereas on the single surviving plaque of No. 310 three rivet-holes, each surrounded by a circle of differential corrosion, suggest that it may have once been provided with large domed rivets like those on the pelta-shaped wings of the shield-boss cover from Tomb 3 in the Late La Tène cemetery at Arquà Petrarca in northern Italy (Callegari 1941: Fig. 9). I have noted above that the latter is one of a group of shield-mounts with pelta-shaped wings from the southern fringes of the Alps in northern Italy and Slovenia. However, in this group the wings are not only smaller than those on Nos 310 and 318 but also made integrally with the boss-covers; nevertheless, both the British and the continental boss-covers have ridges bordering the upper and lower edges. Klindt-Jensen (1950: 47) has suggested that the inspiration for pelta-shaped wings may have been the circular flanges, on round shield-bosses, which, when applied to shields with central spines, would have produced a double-pelta effect. The same kind of reasoning could be applied to the crescentic plaques of the Grimthorpe shield (Stead 1968: Fig. 12.2 and 3). On the other hand, the idea of ornamenting shields with pelta-shaped wings may have been taken from the Amazonian shields of Classical tradition. It is, therefore, of interest that on certain Classical pelta there are ornamental roundels in precisely the same position as those on the wings of No. 318 (Thompson 1968: Pl. XXVb).

Three of the British shields with boss-covers derived from the continental 'hump-backed' boss-mounts have bronze sheaths for the spine-ribs. On Nos 308 and 310 these sheaths were integral with the boss-covers, but



it is not known whether this was also true of the sheaths on No. 319. No. 308 differs from the spine-cover of No. 310 in that there are no transverse ribs defining the central decorative panel. When viewed from the sides, it will be seen that both Nos 308 and 310 did not completely cover the spines of their shields. In this, as well as in other respects, they compare with the recently-discovered iron shield-mount found with a Late La Tène sword at St. Lawrence on the Isle of Wight (Stead 1969: 354, Fig. 2.4; I.M. Stead: pers. comm.). It is reasonable to suppose that No. 318 was also provided with bronze rib-sheaths, as did Savory (1964a: 18-9, Fig. 2) in first publishing the Tal-y-Llyn hoard; however, as he (1968a: 102) has subsequently indicated, the composition of the metal, of which the surviving Tal-y-Llyn sheaths are made, suggests that they belonged to the second (No. 319) rather than to the first shield.

C. Fox (1947a: 9-10) has argued that No. 308 is typologically more developed than No. 310, for, whilst the latter's "broad lateral attachments and the raised cross-bars defining the limits of the boss proper demonstrate its derivation from a simple La Tène II type", the former "is a more advanced example of the type; the aesthetic unity of boss and ribs is complete and the breadth of the lateral attachments has been greatly diminished". I accept this hypothesis, although I doubt whether it is reasonable to infer that No. 308 "should be considerably later in date." Savory (1964a: 21) has considered that No. 318 must be earlier in date than Nos 308 and 310, an argument for which there is singularly little convincing evidence. However, it does seem reasonable to infer, following Savory (1964a: 28), that

Nos 308, 310 and 318-9 were the products of smiths working in northern Wales, for, with the proviso that the total number of shield-finds from Britain is still very small, these shields share certain features that do not occur on shields found elsewhere.

In the foregoing discussion, only certain features of the northern Welsh shields have been considered. It has been assumed that the four shields appear to have had the following mounts. The Llyn Cerrig Bach shield had a piece of metal almost completely covering the raised spine (No. 308); the Moel Hiraddug shield had a similar mount as well as two pelta-shaped side-plaques (No. 310); the first shield from Tal-y-Ulyn (No. 318) was probably identical in layout to No. 310, with the possible exception of rib-sheaths which may have not survived or may have never existed; the second Tal-y-Ulyn shield (No. 319) had an arched boss-mount, rib-sheaths, and two trapezoidal side-plaques. This much seems reasonably certain. However, it is doubtful whether one can be sure that these shields were not provided with additional metal mounts; indeed, in each of these three deposits further sheet bronze fittings were discovered, that may once have adorned shields.

The Llyn Cerrig Bach deposit also included a circular bronze disc with eccentric opening and repoussé relief ornament (No. 325) and two bean-shaped plates (No. 324), which have also been considered as shield-fittings (C. Fox 1947a: 76; Stead 1968: 178; Lynch 1970: 257). As I have already noted, it has also been suggested that a pair of pelta-shaped plates may have flanked the spine of No. 308. Indeed, it is possible that all these pieces

may once have embellished a single shield; the similarity of the relief triskele on No. 325 to the engraved examples on No. 308 is close enough to suggest that they belonged to the same shield. Moreover, whilst it cannot be proven, it seems possible that there may once have been a second disc identical to No. 325. Fig: 134 indicates the kinds of arrangements that could have been made; it must be stressed that I consider them to be no more than conjectural reconstructions. I offer them since I doubt whether C. Fox's judgement (1947a: 10) that the fishtail ends of the ribs on No. 308 "have a constructional finality" necessarily precludes the addition of decorative terminals.

Besides No. 310, the Moel Hiraddug find also included four or five three-armed plates (No. 326B) and a square plate ornamented with a triskele-roundel (No. 326A), as well as an iron sword. It seems probable that Nos 326A-B might well have embellished the same shield as No. 310, if one considers, as a working hypothesis, that the find consisted of a ? warrior-burial, represented by an iron sword and a bronze-mounted shield. It is possible that there was originally another plate like No. 326A, and that the two were placed at either end of the shield's spine (Fig. 136 ).

The Tal-y-Uyn find also included four 'composite discs' (No. 319). Since these were tin-plated and are of brass like the other pieces listed under No. 319 in the Catalogue, and since the motif on the boss-cover can be restored as (almost) identical to those on the four discs, it seems likely that the latter belonged to the same shield. I offer two reconstructions (Figs 143-4), the discs being respectively on either side of the spine above

and below the boss, and at the ends of the trapezoidal wings and the rig-sheaths. For the former reconstruction analogies can be adduced on the Chiusi sarcophagus (Stead 1968: 178, Fig. 17.3) and on the Orange triumphal arch (Amy et al. 1962: Pl. 47), whereas only the terminal discs of the latter reconstruction could be paralleled elsewhere, as on No. 322. A close parallel to the Tal-y-llyn discs is a triskele roundel ornamented in a relief from a burial on Lambay Island (Macalister 1929: 243, Pl. XXIV.1; Leeds 1933a: 59, Fig. 24a); whether or not this piece was mounted on a shield with the shield-boss from the same site (Macalister 1929: 243, Pl. XXIII.19) is not known.

### 17.3.3. Bronze spine-mounts from Meare and South Cadbury Castle

An incomplete bronze spine-mount recently discovered at South Cadbury Castle (No. 313) and a fragment of another from Meare (No. 309) appear to represent a hitherto unknown kind of shield-mount. I (Spratling 1970b: 4) have suggested elsewhere that No. 313 was fitted lengthwise over the top of a spindle-shaped boss and have proffered a conjectural reconstruction of its former appearance (Ibid.: Fig. 1). Like the spine-mounts from Llyn Cerrig Bach and Moel Hiraddug (Nos 308 and 310), it does not appear to have covered the whole of the boss. In my reconstruction I suggested that No. 313 merely capped the boss, although it is also possible that it dipped down at the sides to attachment-tags like Nos 308 and 310; the latter alternative seems less likely when the outline of No. 313 is compared to these two northern Welsh shields. No. 313 also differs from these two, in that the rib swells out into an oval terminal. Since No. 309 is very

similar to this terminal, it seems probable that it formed part of a spine-mount of the South Cadbury kind.

In publishing No. 313, I (Ibid.: 5) also compared it to a bronze mount in the 'Stanwick' hoard (Proc. Archaeol. Inst. York 1846 (London, 1848): 37, Pl. III. Fig. 5), and suggested that the latter may have been fitted lengthwise over a spindle-shaped shield-boss. Further consideration of various pieces of sheet bronze in that hoard leads me to the conclusion that this piece is more likely to have adorned the handle of a shield rather than its boss; the various pieces in this hoard that seem likely to have adorned a shield are discussed below (Chapter 17.3.5.).

In conclusion, it is possible, in view of the proximity of their findspots, that Nos 309 and 313 may represent a regional form of shield-mount.

#### 17.3.4. Bronze-spined shields from Wandsworth and the River Witham

The remains of two shields from eastern England are unique throughout the 'La Tène world' in having all-bronze spines made of a single piece of metal. On No. 320, the ribs and boss were made in one piece, but on No. 322 roundels at the ends of the ribs were made integrally with the ribs and boss. It is likely that separately made roundels were placed beyond the expanded ends of the ribs of No. 320. An unusual feature of the two shield-spines is the unequal length of the ribs; on other British finds and on all known La Tène shields from the Continent the ribs are of equal length. It is just possible that this feature may have been influenced by shield-design beyond the Alps, for ribs of unequal length may also be observed on a shield sculpted on the Chiusi sarcophagus (Stead 1965b: Pl. LVa; 1968:

Fig. 17.3). It may be noted that the bronze mini-shield of Witham type from Hod Hill (No. 331) also has ribs of unequal length.

On both Nos 320 and 322, the boss is markedly rounded; on the latter it is almost hemispherical. The outlines of these two bosses stand in marked contrast to the slenderness of the spindle-bosses on shields of Early-Middle La Tène date. It seems probable that the designs of Nos 320 and 322 were influenced by the hemispherical bosses of Late La Tène times. Spined shields with almost hemispherical bosses are represented in model form on two finds from Italy. Whilst the provenance of one is unknown (Behn 1914: 7, Abb. 4.2), the other was found in a hoard of 'votive' miniatures at Telamon (Montelius 1895: Pl. 205.9), which also contained a 'Nauheim' brooch (Ibid.: Pl. 205.1). Spined shields with circular bosses can also be seen amongst the trophy-panels on the triumphal arch at Orange (Amy et al. 1962: Pls 16 and 18). As I have noted above (17.3.1) the Orange arch also provides an analogy for the all-metal spindle-shaped boss with flanges of the same outline on either side (Ibid.: Pls. 11.78 and 46.78). Other parallels for this kind of boss have already been noted (Chapter 17.3.1.).

The provision of roundels at the ends of Nos 320 and 322 is a further distinctive feature that is unparalleled on continental La Tène shields. It is possible, as R.A. Smith (1905a: 104) argued, that the Grimthorpe shield was also provided with decorative roundels at the ends of the ribs; I have suggested above that similarly placed roundels may have ornamented the Llyn Cerrig Bach, Moel Hiraddug and Tal-y-Ilyn II shields. It may be noted that No. 331, the miniature shield from Hod Hill, is also ornamented in this manner.

### 17.3.5. Miscellaneous mounts.

Various other bronze mounts appear to have been fitted to shields with wooden spines and/or spindle-shaped bosses. Nos 307 and 315 are fragmentary rib-covers, like those on the Grimthorpe shield (Stead 1968: 169, Fig. 12.4, 5); other rib-covers of this form have been discovered at Eastburn (Sheppard 1938) and North Grimston (Mortimer 1905: 355, Fig. 1019; I. M. Stead; pers. comm.).

No 314 may have formed part of a mount that covered the whole of the spine of a shield, but it is too incomplete for one to reach definite conclusions concerning its original form. Another mount from South Cadbury Castle (No. 329) may also have been fitted lengthwise over a shield-boss but I have been unable to find any close parallel for its form. Nevertheless, the bronze half-cylinder from Etrechy (Stead 1968: Fig. 17.5) may provide an analogy for the manner in which No. 329 was mounted onto a shield. The long strip with an oval terminal from St. Mawgan-in-Fyder (No. 328) might also have been fitted to the long axis of a shield (C. Fox, in Threipland 1957: 80-1), but this piece too is unique.

C. Fox (quoted in R.R. Clarke 1951b: 220) has suggested that Nos 327A and B may have been mounted at either end of a shield, "arranged to balance a large circular boss in the centre," but, as Clarke (loc. cit.) noted, "no surviving Iron Age shield shows an identical arrangement." However, I illustrate here (Fig. 216) what appears to be a fragment of a mount similar to Nos 327A-B. The fragment, not hitherto illustrated, is included in the 'Stanwick' hoard (MacGregor 1962: no. 122), and may have formed part

of a shield that seems to be represented by various other sheet bronze mounts in the hoard (MacGregor 1962: Nos 100-104, 106; Proc. Archaeol. Inst. York 1846 (London, 1848): 37, Pl. III. Fig. 5). The last of these pieces appears to be a handle-mount, whilst MacGregor's no. 106 would have been fitted to a convex surface precisely resembling a shield-boss. Whether the latter mount would have been fitted to a hemispherical or to a spindle-shaped boss is not altogether clear; the elongated outline of the mount suggests that the boss was of the latter kind. The two identical mounts with highly formalised faces (MacGregor 1962: nos 103-4) have scalloped flanges of a kind that can only elsewhere be paralleled on the extensions to the smaller roundels on the Battersea shield (No. 305); the transverse ribs across the middle of each face recall the ridge that so sharply truncates the base of the face on the end of No. 320. MacGregor's no. 102, the strongly formalised ?horse-head, recalls, in its use of a highly stylised lyre-motif, the patterning on the animal-heads at the ends of the ribs on the Witham shield (No. 322). It seems possible to me that there was originally another bronze head like MacGregor's no. 102, and that these, together with MacGregor's nos 103-4, were mounted on the spine of a shield; it is of interest that the widths of the heads of these pieces are identical. In the conjectural reconstruction (Fig. 217), I have restored the terminal bosses in accordance with Nos 327A and B, and have added MacGregor's nos 100-1 as decorative border-strips. Her no. 101 is curved, having a radius of about 235 mm; if it ran round the curved ends of a shield, the latter would have been about 470 mm wide. This is not much wider than Nos 305 and 322, which are respectively 355 and 405 mm wide; as



normally restored, No. 310 would have been at least 520 mm across (= the diameter of the two pelta-shaped plates). It is possible that MacGregor's no. 100 may have bordered the sides of the shield. Several fragments survive, at least two strips being represented; one of the strips is at least 400 mm long. Across the centre of the shield, marked in broken outline, is the presumed handle-mount.

To conclude this section, I wish to draw attention to the crescentic strip in the Balmaclellan hoard (Anderson 1883: 128, Fig. 105; C. Fox 1958: 116, Pl. 61b). Not only its outline but also the layout of its ornament *are* similar to the flat penannular sections of the terminal roundels of No. 322. Also included in the Balmaclellan hoard is a series of scalloped strips (Anderson 1883: 128-9, Fig. 106) which, though reminiscent of the arcaded bucket-mounts from the Santon hoard (No. 425), recall the bronze facing on Nos 305 and 322; the four three-cornered plates from Balmaclellan bear a certain resemblance to the four or more three-armed plates alleged to have been found with the Moel Hiraddug shield-mounts (No. 326B). It seems to me that these sheet bronze mounts in the Balmaclellan hoard may all have been fitted to a wooden shield.

#### 17.4. Mounts from shields with circular bosses

##### 17.4.1. Introduction

The circular shield-boss is a Late La Tène innovation on the Continent. Several forms are known, including the hemispherical, the conical, and the spiked (= the Stangenbuckel). The range of forms current in Late La Tène times has been discussed and illustrated by Jahn (1916: 152-60, Taf. III).

In Britain both hemispherical and conical bosses are known. Hemispherical bosses are found on Nos 305-6 and 321, whilst conical bosses are represented by Nos 312A-C and by iron specimens from Snailwell (Lethbridge 1954: 32, Pl. Vc) and South Cadbury Castle (L. Alcock: pers. comm.).

#### 17.4.2. Triple-bossed shields

The Battersea shield (No. 305) is embellished with three large ornamental roundels with central bosses. A similar arrangement is indicated by the three conical bosses from the Polden Hill hoard (Nos 312A-C) and by one of the mini-shields from Worth (No. 332C). It seems likely that No. 321 formed the central roundel of a shield like No. 305.

As R.A. Smith (1905a: 93) has noted, it is probable that the arrangement of the three roundels is derived from such shields as that from the River Witham (No. 322), the terminal roundels having been enlarged, and the spine replaced by a large central roundel. The extensions to the smaller roundels on No. 305 could be considered as diminutive ribs. Although this is a reasonable explanation of the origin of the triple-bossed kind of shield, it need not imply that all the surviving specimens of this kind of shield were made at a later date than shields with central spines and relatively small terminal roundels. Indeed, as I have argued above (Chapter 17.3.4), there is reason to consider the marked roundness of the central bosses of Nos 320 and 322 to have been due to contemporaneity with Late La Tène hemispherical bosses; moreover, whether or not it is accepted that the Grimthorpe shield was ornamented with a pair of small terminal roundels

(R.A. Smith 1905a: 93), the crescentic plates to either side of its spine may have been modelled on the large circular flanges of such bosses as Nos 305 and 321. On present evidence, it is doubtful whether it can be considered certain that spined shields with terminal roundels were first made at an earlier date than shields with three large roundels.

It seems that both kinds of shields are confined to Britain and were therefore insular innovations, for I know of no continental parallels. However, it does seem possible that there may have been ceremonial shields of similar design to No. 305 in the Classical world, for, as I have noted above (Chapter 17.2), the outline of this shield is paralleled by the ceremonial ancilia of the Salian priests at Rome. It is interesting that the scroll ornament around the circular boss on a ceremonial shield (of a different outline) depicted on the late first century B.C. monument to Caecilia Metella on the Appian Way (Azzurri 1895: Tav. I.B) (Fig. 214B) bears a striking resemblance to the layout of the ornament on the central roundel of No. 305. It is of further interest, in this connection, that another shield depicted on this monument has a pair of ?boars on either side of the central spine (Azzurri 1895: Tav. I.B) (Fig. 214A), in a similar position to the boar formerly affixed to No. 322. These comparisons lend additional support to the extensive Classical influence seen by Jope (1971a) on Nos 320 and 322.

#### 17.4.3. Shield-mount from Fulham

The cruciform shield-mount from Fulham (No. 306) is unique, although it is possible that one of the mini-shields from Worth (No. 332B) was intended to represent a shield with a similar kind of mount. The hemispherical

central boss may be compared with those on Nos 305 and 321. No. 306 is a curious piece for, apart from rivets projecting only a short distance behind the small bosses in the longer arms, there is no means of attaching the mount to a shield. It is possible that the piece is unfinished. I prefer to suspend judgement on this shield-mount; indeed, I wonder whether it really does belong to the late pre-Roman Iron Age.

#### 17.5. Aspects of shield-construction

No complete late pre-Roman Iron Age shield has yet been discovered in southern Britain. The metal fittings that have survived were once attached to perishable, organic mounts. From continental finds we know that at least some shields were of wood (cf. Vouga 1923: Pls XVI.10, XVII and XVIII; Rosenberg 1937: 48-61, Figs 29-32); some were made of one piece of wood, others of more than one piece like one from La Tène (Vouga 1923: Pl. XVI.10). One, the shield of a Celtic mercenary in Ptolemaic Egypt, was of very sophisticated construction, made up of several thin ply-like slats (Kimmig 1940). Behind the boss No. 311, traces of three planks of wood were preserved on discovery, whilst traces of "decayed wood or leather" were observed behind the metal plates of the Grimthorpe shield (Mortimer 1905: 150).

The semi-tubular edging No. 316 and on Nos 305 and 322, as well as the length of the rivets on the latter two and on Nos 320-1, indicate that at least some of the British shields were only a few millimetres thick.

It is possible that some of these shields may have been of leather, rather than wood, or have had a leather covering. Whilst no continental

La Tène shield is known to have been covered with leather, or to have been wholly of leather, a leather-covered wooden long shield of uncertain, but presumptively pre-Christian, date has been discovered in Ireland (Ritchie 1969: 36-7, Fig. 1.5). A brightly polished reddish-brown leather covering would have provided a subtle contrast to the metallic sheen <sup>of the</sup> brightly polished bronze fittings of the southern British shields, if the latter had been fitted with such covers.

If leather was used in the manufacture of the southern British shields, it is probable that more than one hide would have been needed. Where the dimensions of continental shields are known, they are frequently as much as a metre long (Vouga 1923: 59; No. 322 is 1180 mm). From a study of the fragments of shields and tents made of hides found in the Claudian fort at the Valkenburg, Groenman-van Waateringe (1967: 210) has calculated that the largest useful pieces of hide available were about 600 to 700 mm long by about 500 mm wide. In the construction of the leather shields or shield-covers at the Valkenburg, two pieces of hide were used, of unequal or equal sizes; further overlapping strips of leather were used to joint together by stitching the two hides for each shield (Groenman-van Waateringe 1967: 52-73, Figs 10, 12, 14). In view of the fact that the lengths of rivets and the edging (-fragments), that have survived of the southern British late pre-Roman Iron Age shields, are only a few millimetres thick, it is of interest that a team led by Coles (1962: 177-9) was able to produce an extremely tough replica of a Late Bronze Age leather shield that was only about 4 to 6 mm thick; tanned cattle-hides are normally of this thickness (Waterer 1956: 153). Thinner hides for covers could have been produced either by

shaving down, an extremely wasteful process, or by splitting (Waterer 1956: 153-4; Hodges 1964: 151).

Had such shields as Nos 305 and 322 originally been of leather or leather-covered, it is possible that their slight convexity of surface and their slightly inward-curving sides were adopted for structural reasons. It is easier to keep a hide taut and prevent it wrinkling by stretching it over a convex than over a flat surface. To give greater strength to a shield such as No. 322, which does not have a central longitudinal spine like No. 305, it might have been necessary with no backing for leather to pull the sides inwards towards the centre with cross-pieces of leather or with thongs. This would cause not only an inward curving of the sides but also a slight convexity of surface. It is possible, therefore, that the outline of the Battersea shield may have been due to structural reasons, rather than to influence from the Salian shields of Rome as has been suggested above. It is also possible that the bronze sheeting on the faces of Nos 305 and 322 may have used to imitate the effect of highly polished leather rather than have been due to influence from Etruscan practice as Jope (1971a: 61) has argued.

On the Continent, the bosses, spines and handles were either made in one piece with the board (Rosenberg 1937: Fig. 29, No. 127a) or made separately (Ibid.: Fig. 30). On the wooden shields from Hjortspring which were of multi-piece construction (Ibid.), the constituent parts were held together either by wooden dowels or by mortice-and-tenon joints. On Middle La Tène shields the iron strengthening strip placed transversely over the boss would have helped to secure the boss in position (Vouga 1923: Pls XVII and

XVIII). Whilst such pieces as Nos 308-13 and 317-9 were probably mounted on wooden or leather spines and bosses, the thickness of Nos 305-6 and 320-2 suggests that they stood on their own on their respective shields. It is uncertain whether such narrow half-tubular ribs as Nos 314-5 and those from Eastburn (Sheppard 1938), Grimthorpe (Stead 1968: 169, Fig. 12.4 and 5) and North Grimston (Mortimer 1905: 355, Fig. 1019) covered or replaced fine organic ribs on the faces of their respective shields.

## 18. Mirrors, mirror-handles and mirror-fragments (Nos 333-58)

### 18.1. Introduction

Largely owing to the fineness of their designs, the southern British hand-mirrors have received a great deal of attention since the beginning of this century (R.A. Smith 1909a; Leeds 1933a: 28-37; C. Fox 1945a: 205-18; C. Fox and M.R. Hull 1948; C. Fox 1949; 1958: 84-105; 1960; Stead 1965a: 55-7; Dyer 1966; Megaw 1970: nos 260-1, 263; Spratling 1970d). The fundamental studies of these objects were those of C. Fox who analysed not only their ornament but also their forms, in particular the forms of their handles.

At least twenty-seven mirrors and mirror-fragments have been discovered in southern Britain; all but two (from Glastonbury (No 341) and Maiden Castle: Wheeler 1943: 272, Fig. 89.2) appear to have been completely of bronze. In every instance the mirror itself is formed by a wrought sheet metal plate of rounded outline, while the handle was separately made. The great majority of the surviving plates are embellished at the back with chased or engraved designs. Whatever one may feel about the quality of the ornament, all the mirrors were superbly finished with extremely careful polishing not only of the mirror itself but of every other part .

In the present study, a re-analysis of the mirrors is attempted, taking further and modifying the arguments advanced elsewhere (Spratling 1970d: 11-5). I follow C. Fox in discussing separately the constituent parts of the mirrors. This procedure does still seem to be valid, not only since the



constituent parts were made separately and later fitted together, but also since technical distinctions can be drawn in the manner of their production; for example, in every case, bronze mirrors had handles of cast bronze, but plates of wrought sheet metal. Since casting and cold working involve different sets of skills and since these operations require different equipment; since the standard of workmanship displayed by the handles and plates is almost invariably high; since specialization in several stages of production of prestige objects (such as it seems reasonable to consider the southern British late pre-Roman Iron Age mirrors to have been) has been widely documented in many societies (Rowlands 1971); and since, finally, there are only 12 whole or completely reconstructable mirrors out of a total of 26 mirror-finds from southern Britain, it does seem reasonable first to treat the constituent parts separately and only afterwards attempt a kind of multivariate analysis.

### 18.2. Mirror-handles

Just over twenty years ago, C. Fox (1949a) divided the handles of the mirrors into three types; the third (III) was divided into two Groups (A and B), of which the former was sub-divided (Ai and Aii). The handles that have come to light since that analysis confirm its general usefulness. However, in the present study, I intend to make certain minor alterations to Fox's scheme, and, in so doing, to renumber the various forms.

### 18.2.1. Group I: Bar-handles

This form is characterised by a straight bar (more or less elaborately ornamented) with an open ring at the end opposite to that to which the plate is attached. The latter end has either an open ring or a semi-circular moulding. These handles correspond to Fox's type I (C. Fox 1949a: 25-8, Fig. 1).

Altogether nine examples of this form are known, of which only one (No. 353) has been found in southern Britain. In addition to those listed and illustrated by C. Fox (Ibid.), two others have since been published: one from Ballymoney, Co. Antrim (Jope 1955b: 94, Fig. 1.3), the other from Spider Cave, Settle, West Riding (A. King 1971: 411, Fig. 3e). It is clear that the form is primarily Irish and northern British in distribution (Map 27).

Since he assumed that the Arras handles were of third-century B. C. date, C. Fox (1949a: 24-5) considered type I handles to have been the earliest of the British series. However, in view of the uncertainties concerning the dating of the Yorkshire cart-burials (Stead 1965a: 81-4), this cannot be accepted without a great deal of reserve, despite the fact that the nearest continental analogies for Group I handles are to be found in Early La Tène contexts (Stead 1965a: 55-6, Fig. 31.1 and 2). In passing, it should be noted that the object from Bad Nauheim once thought to be a mirror (Schwabe and Behrens 1933: Abb. 1.2; Stead 1965a: 56, n. 4) is in fact part of a set of horse-harness (Werner 1953: 48, Abb. 4.6-7).

### 18.2.2. Group II: Single-looped handles

Group II handles are characterised by a single oval loop with a pair of out-bent arms rivetted onto the base of the mirror-plate. The group may be divided into two forms, A and B, which correspond to Fox's groups IIIAi and IIIAii respectively (C. Fox 1949a: 29-32): form A is distinguished from B by the presence of a transverse moulding at the point where the two sides of the handle come together at the pointed end of the oval loop. Form A is represented by four handles (Nos 348, 351, 354, and 358), B by two (Nos 334 and 350). Two of the form IIA handles have decorative open-work 'infills' between the arms (Nos 348 and 354). While the findspot of No. 358 is not known, the other three handles of form IIA were found in south-western England; the two handles form IIB were both found in eastern Essex. The different distributions of these two forms (Map 27) suggest that they are the products of two localised schools.

### 18.2.3. Group III: Bar-handles with oval terminal loops and splayed arms

Group III handles, not formally distinguished as a separate group by Fox, might be considered 'intermediate' between Groups I and II, since they combine features found in the latter two groups. In common with handles of Group I are the pointed oval outline of the terminal loop and the splayed arms that are used to attach the handle to the plate. Two complete handles (Nos 333 and 336) are of this form; No. 343, not, however, complete, may also have been of this form. The reason for including No. 343 is that, in common with Nos 333 and 336, the angle subtended by the junction of the two splayed arms is obtuse, whereas the subtended angle on handles of Group II is very acute.

In view of the taxonomic relationship of Group III to Groups I and II, it could be argued that the latter forms were either ancestral to or derived from the former. However, the lack of closely datable contexts for any of the handles of Group III prevents any such judgement from being made with conviction. It is also possible that all three Groups were contemporary and that they were all different modifications of some form of handle of which no examples have survived; in view of the small total number of mirror-handles, this last possibility cannot be excluded. It may be noted that the Group III handles have been found in precisely the same areas as Groups IIA and B. This could be taken as evidence to support the hypothesis that the relationship between Groups II and III is chronological rather than cultural. However, this does not allow for the possibility that different handle-forms may have been made at the same time by different smiths or by different workshops.

#### 18.2.4. Two handles related to Groups II and III

The difficulties inherent in the classification of the handle-forms are nowhere more explicit than in determining the taxonomic status of Nos 353 and 357. Both handles have splayed arms for attachment to the mirror, thus suggesting that they should be assigned either to Group II or to Group III. However, the remaining parts of these two handles have features that are not found in either of these two groups. Without its presumptively circular terminal loop, No. 357 is very similar to the handles of Group III, and should therefore perhaps be considered as a variant of that form. However, No. 355 is even more difficult to classify, for there is one feature that distinguishes it

from every other mirror-handle; it is not modelled in the round, being completely flat and featureless on one face. C. Fox (1949a: 32, n. 2) neatly sidestepped the difficulties that this handle poses by arguing (ex silentio) that the handle was 'Romano-British' and that it represented an ultimate debasement of an extended typological series starting with the handles of Nos 356-7. This is surely special pleading, for there is neither the contextual evidence to demonstrate that No. 355 is later than any of the other handles, nor any evidence to indicate that there was a long history of such development. Nevertheless, despite this, it is possible that Fox was correct in thus interpreting the significance of No. 355, for, as I have already pointed out, the total number of surviving handles is too small for categorical assertions to be made one way or the other. The purpose of the penultimate sentence was to point out that there was no evidence to support Fox's assertion. However, in fairness to Fox, it must not be forgotten that one of the essential assumptions upon which his study appears to have been founded, was that difference in design within particular groups was due to chronological disparity; other factors were considered subordinate to this fundamental assumption.

The oval mirror-plate No. 341 must once have been fitted with a handle related to those of Groups II and III, since the areas of differential corrosion at its base indicate that the handle had splayed arms.

#### 18.2.5. Group IV: Multiple-looped handles.

##### 18.2.5.1. Classification

This group corresponds to Fox's type IIIB (1949a: 32-4). Ten handles have

or had more than two loops; all but one appear to have had two smallish loops and a third larger one at the end. The exception (No. 343) had three small loops in place of the two found on the other handles.

According to the respective designs of the handles, the group may be divided into six forms, A to F. Forms A, B, C, D and E have three loops (two small and one large), while form F has four loops (three small and one large).

Form A is represented by three handles (Nos 335, 340 and 344); the loops are connected by longitudinal mouldings parallel with the long axis of the handle. Whilst No. 344 has three perfectly circular loops, each of them connected by longitudinal link-like mouldings, Nos 335 and 340 have pairs of oval loops placed back to back and connected by a longitudinal moulding. The terminal ring is separated from the second oval loop by a domed moulding on No. 335; but on No. 340 the second loop continues through as a figure-of-eight motif into the terminal ring whose ends clasp the central waist of the figure-of-eight. Both handles have an additional piece at the junction with the mirror-plate. The terminal ring of No. 335 has a separately made disc fitted within it by means of a tang inserted into the lower edge of the upper end of the ring. A similar disc, but cast integrally with the handle, occurs in the same position within the terminal ring of the handle of No. 346.

Form B handles (Nos 339, 342 and 346) are very similar to form A, but in place of the longitudinal mouldings linking the loops there are transverse mouldings. Each handle has a pair of back to back pointed oval loops

that are very similar to those on the form A handles Nos 335 and 340. As noted above, No. 346 has a disc enclosed within the terminal ring in a very similar manner to No. 335, except that it is cast integrally with the handle, whereas on No. 335 it was made separately. Curving outwards from the tops of the handles on Nos 339 and 342 are pairs of arms with coils at the ends; in place of these, No. 346 has a pair of outward-looking bird-head-like finials. All three of these handles are attached to mirror-plates of the so-called 'kidney-shaped' kind, that is, to plates that have an inward-curving lower edge.

Form C is represented by a single example (No. 356). The handle is now incomplete, but has been restored by R.A. Smith (1909a: Fig. 7) to give a symmetrical design pivoting about the junction of the two surviving loops. Although this reconstruction has been accepted by C. Fox (1949a: 32), it seems more likely that the handle should be restored in accordance with the handles of Forms A and B, that is, with two oval loops placed back to back and with a circular or oval terminal ring. It differs from forms A and B in the absence of a moulding connecting or separating the two surviving loops.

Form D is again represented by a single handle, No. 347 the now lost example from Old Warden. Although in general design it is similar to other multiple-looped handles, the three openings in each of the four discs are unique; the closest analogy for such a design is to be found in the two discs with three lanceolate openings in the Group II bit-side-ring from Leicester (No. 164).

Form E is likewise represented by a single handle, on No. 345 the mirror from Nijmegen. The handle is incomplete, but presumably originally had another lanceolate loop like the surviving one as well as a terminal ring. In his reconstruction of the handle, Dunning (1930: Fig. 1) included a disc within the terminal loop on analogy with the handles on Nos 335 and 346; he also assumed that the cast-on collar at the end of the surviving loop was an integral feature of the original design. This, however, is an error, for the collar is quite clearly a repair cast on at a later date; moreover, the design of this collar with the iron pin incorporated into it suggests that the piece of bone (that disintegrated on discovery) that was used to effect the repair, did not bifurcate but was straight. Unfortunately, no record was made of the design of this bone section when the mirror was discovered. The escutcheon at the junction of the handle with the mirror-plate is of very similar general design to that on No. 343. When viewed as here illustrated the resemblance between the faces on these two escutcheons is very striking.

Form F is represented by the handle on No. 343 the recently-discovered mirror from the Holcombe Roman villa. This handle differs from the other multiple-looped examples in that it has three small rings as well as a large terminal loop. The three smaller rings are separated from each other by transverse mouldings similar to those on the three form B handles. The manner in which the ends of the terminal loop are turned inwards and end in eye-like comma-motifs is similar in feeling to the raised ridges enclosing the terminal roundels on the Witham shield (No. 322).



With the exception of form F, all the Group IV handles are distributed in a broad band from Merionethshire across the southern Midlands as far as Colchester in northern Essex. No other mirror-handle types have been found in this area. The most reasonable explanation for this is that the distribution represents a regional preference in handle-design. The distributions of forms A and B, the only forms represented by more than one handle, are even more restricted. Form B handles are only found in the eastern sector of the multiple-looped handle 'zone', whereas form A handles have only been found in the western sector. It would be tempting to regard the form F handle as an export from the main multiple-looped handle zone, were it not for the fact that this is the only handle that has four loops in place of the three found on all the other sub-types. This handle, like the others, is better interpreted as a local product rather than as imported from some area.

#### 18.2.5.2. Origins of the forms

C. Fox (1949a: 32) argued that the multiple-looped handles were developed from the single-looped forms (Group II). He (1949a: 42-3) suggested that a thorough search through continental material might reveal precursors for the latter; however, extensive search by Stead (1965a: 56) and by myself has failed to reveal any reasonable foreign prototypes, although it is just possible that the designs of the British single-looped handles may have been based on a form of single-looped handle found on certain Etruscan and Roman circular mirrors (Gerhard 1843: Taf. XXII.10; Schumacher 1890: Taf. IV.13; T. May 1930: Pl. LXXXV.81b). But the resemblance between these Classical examples and the British series is not close enough for one to be sure that

there was any connection between them. As I have noted elsewhere (Spratling 1970d: 11), the openwork handles of certain Roman paterae provide good prototypes for the multiple-looped series of British mirror-handles. Two bronze patera-handles from Pompeii, now preserved in the National Museum of Naples (Tarbell 1909: Pl. XCIX. Figs. 214-5), each have two elongated pointed oval loops set back to back and a large terminal ring. One of them (Fig. — ; Tarbell 1909: Pl. XCIX. Fig. 215) has a large transverse moulding set between the two pointed oval loops in a manner very similar to the arrangement seen on the two form IVB mirror-handles; there also appear to be longitudinal mouldings, parallel with the long axis of the handle, projecting above and below this transverse collar into each of the loops. The two arms of the upper loop curve outwards at the top and end in bird-heads in a very similar, but less formalised manner to those on the handle of No. 346. Another feature of this patera-handle is best paralleled on the form IVF handle on No. 343: that is, the design of the terminal elliptical ring with inward-curving ends. The design of the handle on No. 343 is paralleled on another patera-handle from Pompeii (Fig. 218C; Tarbell 1909: Pl. XCIX. Fig. 216), which also has four openings in its design, three small loops and a large terminal ring. The manner in which the two snakes coil around each other on this patera-handle is not dissimilar to the effect created by the narrow false-relief ribs that coil around the loops on the handle of No. 335 although the sheath-like effect that these ribs create may perhaps be better paralleled on the handles of certain Classical drinking-cups (C. Fox 1958: 94, Pl. 59c). Another trick of design derived from

Hellenistic work is the way in which the ends of linear elements abut against other elements rather than being absorbed into them; such treatment of forms occurs on the handle of No. 340 and on several other kinds of object both in Britain and on the Continent, as was noted above in Chapter 8.2.1.2. The triple-ring design of the handle of No. 343 is also closely paralleled on the bronze calathus-handle from Mont Beuvray, discussed below in Chapter 19.4.1. It seems likely that the same Italian influence that stimulated the design of multiple-looped handles on British mirrors, also stimulated the making of multiple-looped handles for tankards, as indeed is suggested by the triple-ringed handle on the wooden tankard from Tomb 3 in the San Bernardo cemetery at Ornavasso (Bianchetti 1895: Tav. XVII.4).

### 18.3. The mirror-plates

#### 18.3.1. Shapes

Three basic kinds of mirror-shape are found on the southern British series: the truly circular, the 'kidney-shaped', and the 'flattened circular'. Whereas the latter two are British innovations, without parallels elsewhere, truly circular mirror-plates were long made in both 'barbarian' and Classical Europe (Gerhard 1843; Schumacher 1890: Taf. IV.13; T. May 1930: Pl. LXXXV.81b; Stead 1965a: 55-6, Fig. 31). Although various writers (e.g. C. Fox 1949a: 34-5) have commented on the 'kidney-shaped' kind, none has yet observed that some of the other mirror-plates are not truly circular but closer to an ellipse, the upper and lower curves (in relation to the handle) being slightly 'flattened' out. The precise manner in which the outlines were

drawn out deserves further consideration; it seems likely that the kind of geometrical analysis that has been made by Thorn (1967: 56-91) on megalithic structures, may well produce interesting results if applied to the outlines of these mirrors.

Just as with the mirror-handles there are regional variants, so with the shapes of the mirrors regionalism can be detected, although not to such a marked extent as with the handles. To a certain extent the shapes of the plates correspond to the grouping proposed above for the handles.

The truly circular mirror-plates are widely distributed throughout Britain, occurring on all the complete mirrors with handles of forms I, II and V, that is, on Nos 348, 351, 357 and 358 and on the complete Arras mirror, as well as on No. 335 which has a Form IVA handle. The plates of 'flattened circular' outline are, however, more restricted in distribution, occurring mainly in the south-west, on Nos 341, 343 and 352, as well as on the single Welsh mirror, No. 344, and on the mirror exported to Nijmegen, No. 345. The 'kidney-shaped' plates, which are similar to the previous group, but differ in that the edge curves inwards in the area of the junction with the handle, are also relatively restricted in distribution, being found in the midlands and in east Anglia (Nos 333, 339-40, 342 and 346). On all but No. 333 these 'kidney-shaped' plates occur with Form IV handles; No. 333 has a Form III handle. A fourth kind of mirror-plate, not found in southern Britain, is suggested by the openings in the repaired section of the handle from Ingleton (C. Fox 1949a: 35, Pl. II.M); as C. Fox noted, the plate may well have been an adaptation of the 'kidney-shaped' kind.

### 18.3.2. Edging

Another feature of the design of certain of the mirrors is the presence of edging. The character of this edging and the methods of its attachment also show regional differences. Edging occurs predominantly on mirrors with Group IV handles (Nos 335, 339-40, 343-6), and also on No. 352, the mirror-plate from Stamford Hill; the arms at the top of No. 353, the Form I handle from Stamford Hill, indicate that its plate had edging around it.

The edging on Nos 339, 344 and 346 is of wrought sheet bronze, with ends held in the tops of their respective handles. Although also of wrought bronze, the edging on No. 352 is not complete enough to determine its former relationship to the handle. The edging on the other examples was held on with rivetted joints. On No. 345 the edging is tubular and abuts against the sides of the handle-escutcheon; each end is held on to the plate with a rivet. On No. 335 the edging was cast integrally with the handle and bent around the plate; the end of the edging was held in position against the short arm projecting from the handle-escutcheon by means of a rivetted clamp. On Nos 340 and 353, the ends of the edging were held onto short arms projecting from the tops of the handles by means of rivetted rabbet joints. Rabbet joints are extremely rare on British bronzes of the late pre-Roman Iron Age; I have only elsewhere observed this technique on two of Piggott's Group IV ('Brigantian') scabbards - on the extended staples leading down from the suspension-loops on the Cotterdale and Sadberge scabbards (Piggott 1950: Figs. 9.2B, 10.B).

18.4. Conclusions

Certain conclusions may be drawn from the proliferation of links between the mirrors that have been indicated by the preceding analysis. The first is that any 'definitive' grouping cannot take account of three very important factors: 1, we cannot necessarily assume that the findspots of the mirrors always occur close to the places of their manufacture; 2, as I have argued elsewhere (Spratling 1970d: 13-4), there is insufficient evidence to determine whether or not there were changes in design during the period in which these mirrors were made; and 3, the total number of mirror-finds is too small for hard-and-fast conclusions to be drawn, even if there was sufficient evidence to account for the preceding two factors. The effect that a single new discovery may have on the ways that we analyse and interpret mirror-design may be demonstrated by the recent discovery of No. 343. Before its was found, regionalism in mirror-handle design could be interpreted far more easily than it can now (cf. my remarks in Spratling 1970d: 13). Nevertheless, regionalism does seem to be apparent in every aspect of the design of mirrors.

It must be emphasised that the regionalism is 'interlocking' rather than 'mutually exclusive', and may produce mirrors that combine features characteristic of different areas. No. 340 demonstrates this point well, for the 'kidney-shaped' outline of its plate is only elsewhere known in eastern England, whereas its handle may be more closely compared with No. 335, found to the south-west, and the design on the reverse of the plate with Nos 335 and 343. Now, this kind of feature-combination could be

explained in several ways. 1: the mirror was made in a workshop peripheral to those two 'design-zones'; we may note that the findspot of No. 340 is, in fact, more or less intermediate to both these 'zones'. 2: the mirror was made to commission by smiths who normally worked in the different 'design-zones' and who had been brought together at the customer's request to perform this particular task. 3: the customer either purchased a mirror-plate from, or had it made by, a smith, and then took it to another smith to have it chased, and then to another to have a handle and edging made for it; this kind of procedure has been documented in other societies, for example at Kerma in Nubia in the manufacture of daggers (Rowlands 1971: 211). 4: the regionalism in the various aspects of the design is more apparent than real, the selection of features being due to difference in date of manufacture; the mirror may have been made, for example, earlier than No. 335 and later than No. 339, or later than No. 335 and earlier than No. 339, and so on. 5: the selection of features was due to a combination of some or of all the kinds of factors indicated by 1 to 4. Such considerations should also be taken into account in assessing the relationships of all the mirrors. However, it seems to me that at present there are no available means of deciding which of these alternatives is most likely to represent the original state of affairs.

## 19. Tankards and tankard-handles (Nos 359-81)

### 19.1. Introduction

Nearly twenty years ago Corcoran (1952a) presented a study of the wooden stave-built tankards and bronze tankard-fittings of the British Iron Age. Since then he has discussed other examples found more recently than, or omitted from that study (Corcoran 1952b; 1956; 1957). I exclude from the discussion those tankards from later than Flavian contexts, for it is reasonable to suppose that they were made at a significantly later date than the main series under consideration here.

Three intact tankards (Nos 369-70 and 378) have been discovered; whilst all three were found singly, their designs indicate that they were made in pre-Roman rather than Roman times. Other vessels (Nos 359, 365 and 380) were intact on discovery, but disintegrated on being removed from the graves in which they were found. At least seventeen other vessels are represented by their handles.

In this discussion, a new classification of the handle-forms will be advanced, and the forms and construction of the tankards themselves considered. The continental forerunners of these vessels will also be indicated.

### 19.2. A new classification of the handles

In his primary study of these objects, Corcoran (1952a: 90-4) proposed a classification based primarily on the different types of handles. He divided the handles into five classes (I to V), each of the first four of which he sub-divided into two groups. But, in later discussing the newly-found



handle from Puddlehill (No. 372), he (1957: 233) noted that the classification was not really workable, for it was difficult to decide to which of his Classes I and III this handle should be assigned. Moreover, since the variation in design within some of his classes (e.g. IIb and V) is so great, and since No. 362, which was not included in his original study but only later drawn to his attention (Corcoran 1952b), and Nos 365 and 378 could not be fitted into the proposed taxonomy (Corcoran 1952a: 93), it is clear that a new classification is needed. I therefore offer an alternative classification, a grouping that seems to suggest regional preferences in handle-design.

#### 19.2.1. Group I: Simple bar of semi-circular profile

Five handles are of simple bar form (Nos 359, 362, 365 and 370) and of semi-circular profile. They do, however, differ in detail. Whilst the two handles from Elveden (No. 365) are completely plain and have circular terminals, the handle on No. 370 has two discs in the middle, on either side of the bar, although the terminals are again circular. The two handles from Aylesford (No. 359) each have a central disc, with a transverse moulding above and below; each terminal is in the form of a pair of discs. All five discs on the Aylesford handles were presumably originally embellished with discs or domed studs of enamel.

In discussing the presumed double-handled tankard from Aylesford, A.J. Evans (1890: 358-60) adduced the two handles from Elveden as a parallel, and (Ibid.: Fig. 10) produced a reconstruction showing the two of them mounted on a single vessel. However, the presence of inverted

U-section rim-mountings of at least two vessels amongst the surviving fragments from Elveden suggests that Evans' reconstruction is incorrect and that two single-handled tankards were found together in the same burial. In view of this, it is likely that there were also two single-handled tankards, rather one double-handled tankard, at Aylesford. This is rendered more likely by the fact that no certain examples of two-handled tankards are known in Britain. Such pairing of vessels in late pre-Roman Iron Age burials is not unknown elsewhere; for example, pairs of pots occur in the Hertford Heath burial (Holmes and Frennd 1964: 13-15), while a pair of bronze-bound wooden buckets has been inferred from the surviving bronze fragments in the recently discovered burial at Baldock (No. 407). It is possible, too, that pairs of buckets were found in burials at Aylesford (No. 406) and at Great Chesterford (Nos 408-9).

Although of semi-circular profile and consisting of a relatively simply moulded bar, No. 367 is ornamented with a very formalised animal's face. The modelling of this face is very similar to those on the handles of the Great Chesterford buckets (Nos 408-9); the modelling of the snout may be compared with the snouts on the terminals of the spiral bronze bracelet from the burial at Snailwell (Lethbridge 1954: Pl. Vb). All these pieces come from a relatively restricted area, which may suggest that they were the products of a single local workshop or school.

19.2.2. Group II: The 'double-unit' form

These tankard-handles are characterised by the division of the design into two symmetrical units, separated from each other in the middle and, with

the exception of No. 380, placed 'back-to-back' in mirror image. Whilst Nos 364 and 369 each have a pair of simple back-to-back open loops with bar-terminals whose axes are transverse to the long axis of the handle, Nos 373-4 differ in that the loops are circular and are separated by a simple transverse moulding. In this respect Nos 373-4 are similar to the Group III handles from Castor and Puddlehill (Nos 363 and 372).

No. 380 has two identical solid units placed back-to-back and separated by a transverse moulding; however, each unit is only identical in the sense that if the handle were chopped in half in the middle the two halves would be identical if laid side-to-side. This same kind of symmetry may also be observed on the central bosses of the shields Nos 320 and 321. Moreover, it is of some interest that the relief curls on the Welwyn handle are treated in a very similar manner to the curved 'beaks' of the 'bird-heads' on No. 321. They are similar, too, to the scroll on the terminal of an incomplete shield-boss mount from South Cadbury Castle (No. 313).

### 19.2.3. Group III: The 'triple-unit' form

This group of handles is distinguished by triple-unit designs. No. 371 has simple open loops; like two of the Group II handles (Nos 364 and 369), it has simple bar-terminals whose axes are transverse to the long axis of the handle. Nos 363 and 372, both from east England, also have open loops, but these are intercalated with transverse mouldings in a very similar manner to the handles on the Colchester, Great Chesterford, Holcombe and Old Warden mirrors (Nos 339, 342-3, and 346-7). The

incomplete handle from Bulbury (No. 361) is also similar to certain mirror-handles, but differs from Nos 363 and 372 in that, instead of being set transverse, the mouldings are set parallel with the long axis of the handle and 'link' each pair of loops together; the arrangement is identical to that on the handles of the Birdlip, Desborough and Llechwedd-du-bach mirrors (Nos 335, 340 and 344). On Nos 368 and 379 the central element is expanded and, unlike the two other elements set above and below it, is solid and bears relief ornament. Whilst Nos 367 and 375 each have three circular openings, their outlines are asymmetrically scalloped in a most unusual fashion.

#### 19.2.4. Group IV: Lanceolate handles

Six handles are of lanceolate outline, although they differ in detail. Nos 376 and 378 have asymmetric ornament enclosed within a lanceolate border; in this respect, they recall the designs of two handles of the preceding group (Nos 367 and 375). Whilst both Nos 376 and 378 have a more or less rectangular profile, No. 369 is semi-circular; enclosed within its lanceolate border is a simple open pattern consisting of solid lanceolate elements arranged end-to-end in a chevron. Three other handles are solid in design, and each have a central groove; one has been found in southern Britain, at Bartlow, Essex (J. Gage 1834: Pl. III. Fig. 9), while the other two come from Scotland (Corcoran 1952a: 101, nos 24-5, Pl. IX.2, 3). However, it is probable that all three were made in Roman times.

#### 19.2.5. Group V: Winged handles

Only two examples of this form are known: one of them is probably

pre-Roman in date (No. 377), whilst the other occurs on the late Roman tankard from Shapwick Heath, Somerset (Corcoran 1952a: 98, no. 7; 1952b: Pl. XXVIII). They are similar to the two Group IV handles from Scotland, but, whereas the latter have a central longitudinal groove, the Group V handles each have a central longitudinal ridge, as well as a markedly lozenge-shaped plan.

#### 19.2.6. Group VI: Rectangular handles

Only one example of this kind of handle has been found in Britain (No. 366); it is rectangular not only in plan, but also in profile. Another handle of rectangular plan, but of semi-circular profile, occurs on a wooden tankard from the vicinity of Carrickfergus, Co. Antrim, that has recently been rediscovered by R.G. Haworth (pers. comm.). The incised design on the decorative plaque above the handle bears a striking resemblance to the terminals of the Carlingwark Lock tankard-handle (Corcoran 1952a: 101, no. 22, Pl. X.4); moreover, the manner in which the hatched background on the plaque is divided up into sections by pairs of parallel lines is reminiscent of such Scottish hatching-technique as that seen on the crescentic plate in the Balmaclellan hoard (Anderson 1883: Fig. 105).

#### 19.3. Tankard-construction

As noted above, only three British tankards of pre-Roman date have survived intact (Nos 369-70 and 378); a fourth, of Roman date, from Shapwick Heath, is also intact, while a fifth has been found in northern Ireland. In view of the detailed discussion by Corcoran (1952a: 85-7) of the construction of the four British tankards, only a few comments will be offered

here. Corcoran (1952a: 86) contrasted the different methods of joining the staves in the Kew and Trawsfynydd tankards (Nos 369 and 378). The staves of the former are held together by separately-made dowels, whereas the staves of the latter are held together by two wavy strips of bronze hammered into the base. Although he did not mention it, the staves of the Petuan tankard (No. 370) are also held together by dowels near the top and bottom of each stave. As he noted this method of joining is also present on a fragment of a stave-built vessel at Glastonbury (Bulleid and Gray 1911: 313, Fig 65), although it is not clear from the published account whether the dowels on this fragment were integral with the stave, or whether they were made separately as they were for the Kew and Pentuan tankards.

#### 19.4. Tankard-design

##### 19.4.1. Tankards of waisted profile

It is generally assumed in discussions of the British tankard-series that all but the Trawsfynydd tankard were truly cylindrical in shape, and that the waisted, 'cooling-tower' profile of the Trawsfynydd tankard is unique (C. Fox 1958: 109). C. Fox (1958: 110) argued that the shape of the handle was designed "for the whole flat hand; when inserted, the little finger on one side and the forefinger on the other fit perfectly against the upright sides of the grip which .... are smoothly rounded for their comfort. The hollow curve of the body of the vessel adds to the feeling of security in respect of the left palm as well as the right. Centuries of small improvements must surely have gone to build up this perfection." He concluded that it was workmanship that had "hardly (been) touched by Roman classicism."

However, the recent re-discovery of the Carrickfergus tankard means that two of the five known intact tankards found in the British Isles are of this waisted profile, and that such tankards cannot therefore have been all that rare. Moreover, the shapes of some of the handles that have been found singly show that tankards of 'cooling-tower' profile were almost as common as those of truly cylindrical shape. Of the fifteen single handles from southern Britain which retain both terminals intact, the planes of the undersides of the terminals of at least five (Nos 362, 368, 374 and 379-80) indicate that they must have been attached to tankards of waisted profile.

As noted above, this profile is generally considered to have been a British innovation. But this view is incorrect, for the profile is taken from neo-Hellenistic tankards of the calathus type (for the name of this kind of drinking-vessel, see Hilgers 1969. Taf. 1), a type represented in silver in the Boscoreale and Casa del Menandro treasures at Pompeii (Hilgers 1969: Taf. 2.43; Strong 1966: 134, Fig. 27g). All-bronze calathi were produced in large numbers in Campanian workshops from Augustan times onwards and were widely exported not only to other parts of the Roman Empire but also beyond its frontiers, as Ulbert (1960) has indicated; such vessels have been found, for example, at Idria (Szombathy 1903: 328, Grab 5, Fig. 136 and 136a), Manching (Ulbert 1960: 69-72, Abb. 1, Taf. 5), and Ornavasso (Bianchetti 1895: Taf. XVII.4). Therefore, it is quite likely that vessels of this kind were imported into Britain before the Roman Conquest. In this connection,

it is of interest that ceramic skeuomorphs of calathi were being produced at Colchester in the middle years of the first century A.D. (Hull 1963: 182, Form 121, Fig. 102), and that handle-less pots of this profile are a common product of the 'Gallo-Belgic' family (cf. Hawkes and Hull 1947: 225-6, Form 51, Pl. LI.51A, C). It is therefore clear that Fox's judgement on the apparent lack of "Roman classicism" in the design of the Trawsfynydd tankard was quite incorrect.

To conclude this section, I wish to draw attention to the handle with three open rings incorporated in its design from Mont Beuvray (F. and N. Thiollier 1899: Pl. XLIX. 20; Henry 1933: 81, Fig. 8.5). The three rings on this handle are intercalated with transverse mouldings in a similar manner to the Group III tankard-handles from Castor and Puddlehill (Nos 363 and 372). It is clear that the design of the Mont Beuvray <sup>handle</sup> is to be derived from the same stock as the British series. In her discussion of the Italian wine-services that were imported into the area north-west of the Rhine in late La Tène times, Birchall (1965: 289, Map IV) alleged that they were absent at Mont Beuvray, and concluded that their absence could be accounted for by a lack of "contact with Italian influence". However, this statement is incorrect, for as well as the tankard-handle, the thumb-plate of a bronze wine-strainer, of a kind widely distributed in late La Tène Europe, has also been found at Mont Beuvray (Christlein 1964: 17, no. 18; F. and N. Thiollier 1899: Pl. L. 15). It is of interest in this connection that fragments of such vessels have rarely been found in late La Tène graves, and that they have mostly been found on the sites of



settlements, whereas the contemporary wine-jugs and patellae have been mostly found in graves (Werner 1954). The profile and the transverse rivet-holes through the arms at the upper end indicate that the Mont Beuvray handle was once attached to a wooden tankard of the calathus type. In design, this handle stands much closer to the neo-Hellenistic calathus-handles (cf. Szombathy 1903: Fig. 136) than do the British calathus-handles.

#### 19.4.2. Cylindrical tankards

Neo-Hellenistic influence is apparent not merely in the design of the British calathi, but also in the truly cylindrical kind as represented by the Kew and Pentuan tankards (Nos 369-70). Corcoran implied this when he drew attention to the wooden stave-built tankard with bronze open-looped handle akin to the present Group III from Ornavasso (Bianchetti 1895: Taf. XVII.8). Although it is clear that this kind of handle provided the inspiration for the simple open-looped tankard-handles in Britain, it is not really very close to any of them, as it has waisted joints between each loop of a kind not seen on any of the British examples. Corcoran (1952a: 90) dated the Ornavasso tankard early in the first century B.C. in accordance with the then-accepted early chronology for the graves in the Ornavasso cemetery. However, in view of the probably lower dates of these graves, the Ornavasso tankard is probably no earlier than early Augustan times. It would thus be effectively contemporary with the British series, which begins in the second half of the first century B.C. All-metal cylindrical drinking-vessels were also produced in some quantity

in Campanian workshops from Augustan times onwards (cf. Strong 1966: 134, Fig. 27h); the type has horizontal raised bands encircling it like the separately-made bronze hoops on the Pentuan tankard (No. 370). Truly cylindrical tankards were also reproduced in large quantities in pottery in the late pre-Roman Iron Age as well as in Roman times (Wheeler 1943: 233, Fig. 72.185; Collingwood and Richmond 1969: Fig. 87a).

#### 19.5. Two bronze handles from Welwyn (Nos 381A and B)

I have left until now a discussion of two unique handles from one of both of the richly furnished burials at Welwyn. Whilst No. 381B was published in the principal report on the Welwyn finds, No. 381A remained unpublished for nearly twenty years.

Even after prolonged discussion with P. Jacobsthal and E. Neuffer, Hawkes (1935: 353-4) was unable to decide to precisely what kind of vessel No. 381A had been attached, beyond concluding that it must have been carinated. C. Fox (1958: 78) rejected this conclusion and suggested instead that the handle had been fitted to a stave-built vessel one inch thick with a two inch-broad rim.

However, a more simple explanation is possible, if Hawkes' contention is accepted that the vessel to which the handle had been attached had a carinated shoulder. It is thus more likely to have been an all-metal vessel, for the manufacture of staves of this profile would have been extremely difficult. The peg projecting downwards below the terminal horizontal disc has its outer face flat (whereas the inner face is rounded),

which, as Hawkes (1935: 352-3) noted, implies "that it was fastened to the inner side" of the rim of the vessel. That this was probably the case is suggested by an all-bronze carinated vessel with a handle rivetted on at its lower terminal just below the carination, its upper terminal merely resting on the rim, from Grave 262 in the cemetery at Giubiasco, near Bellinzona (Ulrich 1914: 617, Taf. LXXV.13). The rim of this vessel has been formed by rolling the top of the sheet bronze side over a cylindrical bar. A rim of this form would have fitted very snugly in the angle subtended by the downward-projecting peg and outward-curving arm at the upper end of No. 381A. Fig. 175 provides a possible reconstruction of the vessel to which No. 381A was attached, based on the form of the Giubiasco tankard.

R.A. Smith (1912: 16-8) noted that a "trace of wood" was present in the dome at the end of the shank of No. 381B. He suggested that it might have been fitted to the cover of a bronze bucket, suggesting that the presence of wood in the dome may have been fortuitous. However, I would suggest that No. 381B might once have been fitted as a handle to a wooden vessel made in imitation of a kind of early Imperial calathus (cf. Strong 1966: Fig. 27c) that had a simple ring-like handle.

20. Bronze cup from Colchester (No. 382)

No. 382 is the only all-metal vessel known to have been made in southern Britain during the late pre-Roman Iron Age, which can reasonably be considered to have been a cup. There can be little doubt that the design of the cup is unique.

The design of the handle is very interesting in two principal respects. Firstly, it is designed to be held with the index-finger resting in the convex upper edge between the ornamental stud and the rim of the cup, and partly around the stud, with the two middle fingers inside the loop enclosed by the handle, and around the lower part of it, and with the thumb pressed up against the outer side of the stud; the little finger could have been used to provide additional support underneath the lower curve of the handle near its lower terminal. Secondly the projecting stud and the pseudo-leaf sheathing may be paralleled on other handles, both at home and abroad. The projecting stud may be compared with that on the handle of another drinking-vessel from one of the late pre-Roman Iron Age burials at Welwyn (No. 381A). Although the resemblance is not particularly close, such projecting studs have not been found on any other vessel-handle from Britain. The pseudo-leaf sheathing on the lower part of the handle of No. 382 represents, as does similar modelling on the handle of the Birdlip mirror (No. 335) and on the Mâcon cup-handle (Megaw 1962), a formalisation of the modelling of leaf-sheaths on handles and other objects in Hellenistic design (cf. Strong 1966: Pls 33A and 34). Furthermore, the manner in which the ornamental stud is placed on a

setting that almost 'grows' out of the handle recalls the manner in which the sepals are bent back around an open flower or seed. Such formalisation of plant-motifs is a common feature of the ornamentation of Classical vessels in late Republican and Imperial times, and may well have provided models for these features of the handle of No. 382.

No. 382 has been compared to the bronze cup from Keshcarrigan, Co. Leitrim (Jope 1955b: 93, Fig. 2.1), and it has been suggested (Ibid.) that the latter was imported into Ireland, on the grounds that only in south-eastern Britain are spun vessels known to have been produced in pre-Roman times. However, despite the recognition since then (R.W. Organ: pers.comm.) that there does not seem to be any evidence for the spinning, but rather for the spin-finishing of vessels in pre-Roman Britain, it may be questioned whether the evidence can sustain such an argument. The evidence for spin-finishing in south-eastern Britain is based on the discovery of vessels made in this way in this area; why one should not use the same kind of evidence to argue that the Keshcarrigan cup was made in Ireland is not clear. It may be noted, furthermore, that the only reasonably close parallel to the Keshcarrigan cup is a handled vessel of willow of unknown but presumptively Irish provenance in the National Museum of Ireland (Jope 1955b: 92), and that a bronze handle from a cup of probably similar profile to the Keshcarrigan cup has since been found at Somerset, Co. Galway (Raftery 1960: 3, 4, Pl. I.162). Although the latter could not have been taken into consideration by Jope, there would seem to be no need to re-iterate the view that the Keshcarrigan cup

was imported into Ireland from southern Britain (Megaw 1970: 160, no. 273), especially since no example of this kind of vessel has yet been found in the latter area.

All-metal handled cups are a feature of late La Tène Europe; their production may have been stimulated by the re-appearance of wine-services imported from the Classical world. The production of such cups as those from Hoby (Eggers 1951: Taf. 13.166) and Mollerup (Klindt-Jensen 1953: Fig. 38), as well as the cup-handle from Mâcon (Megaw 1963), and the Colchester and Keshcarrigan cups, probably sprung from the need for decorative vessels of high quality design for this purpose, just as the thirst for wine stimulated the production of the Group III spouted strainers (Nos 394-9). In passing, it may be noted that I am not convinced by the arguments that have been advanced for considering the Mâcon and Mollerup pieces to have been produced at a much earlier date than that implied above; this is a point to which I shall return when general chronological questions are considered below.

21. Bowls and bowl-fittings (Nos 383-405)

21.1. Introduction

Relatively few all-bronze vessels of the late pre-Roman Iron Age have been found intact in southern Britain, although there are fragments from several sites. Various forms are represented, some with distinctly regional distributions. All-bronze vessels that are certainly or almost certainly imports from the Roman Empire are not discussed, though reference will occasionally be made to them in considering those of British manufacture.

21.2. Group I: Rose Ash form (Nos 383-90)

This kind of vessel is represented by three specimens, in varying states of preservation, from Birdlip, Rose Ash and Youlton (Nos 385, 389-90). Only the Rose Ash specimen is complete. It has a flattish rim, a short vertical neck, and a bulging belly with rounded base; attached to the neck is an escutcheon, zoomorphically modelled, with a ring of bronze threaded through it, which was used to suspend the bowl when not in use.

Five bronze objects (and a possible sixth) also found in the south-west of England (Nos 383-4, 386-8) were once attached as escutcheons to bowls of this form. Nos 383 and 386-7 are very similar to the escutcheon on No. 390, for each of them has a pair of converging ear-like mouldings along the sides and a broad 'mouth' defined by transverse grooves.

R.A. Smith (1926: 282) has noted that No. 387 was placed on its bowl with the mouth facing downwards (and not upside down as on No. 390), as the location of the wear-facet in the horizontal perforation indicates (the

direction of suspension is indicated by an arrow in my drawing). However, the profiles of Nos 383 and 386 indicate that, like the Youlton escutcheon (No. 390), they too were placed upside down on their bowls, with the 'mouth' up and the 'ears' down. Nos 384 and 388 are of different form, with the 'ears' running right round the edges of the perforation in a like manner to those on the links of bronze two-link bits (see Chapter 7.4). Indeed, the resemblance is so close as to have led Shortt (1948: 25) to misidentify No. 384 as part of such a bit. The other possible escutcheon is a bronze object from Glastonbury; it has a double-roll moulding not too dissimilar to No. 388, and is still attached to a fragment of sheet bronze, but it is considerably smaller (Bulleid and Gray 1911: Fig. 48.E 236).

The contextual evidence (cf. the catalogue entries) indicates that these bowls were current at least in the first half of the first century A.D., if not earlier. But this evidence is not sufficiently precise to indicate when they were first made. A. Fox (1961: 196) compared the profiles of these bowls with that of a ceramic bowl from Hénon, Côtes du Nord (Wheeler 1943: 216, Pl. XXVIII, 1, 6; = Schwappach 1969: Abb. 10.35a-b); she suggested that the 'Rose Ash' bowls were based on a Gallic metal prototype of Hénon-design. The Hénon bowls bear, however, ornament of 'Early La Tène' character, as seen for example on the Besançon flagon, and have been assigned by Schwappach to his north Breton Metallstil which he dates to the fourth century B.C. (1969: 232-4, 258-66, 271). A. Fox also drew attention to the incised wavy line on the rim of one of the Hénon bowls, and compared it to the crimped ribs on the rim of the Rose Ash bowl.



However, in view of the probable chronological disparity between the Breton and the south-west English bowls, it is doubtful whether this analogy can be accepted; the wavy line on the Hénon bowl can be more closely paralleled by the incised wavy lines on the stylistically-related Cerrig-y-drudion bowl, Besançon flagon, and Ecury-sur-Coole disc (Schwappach 1969: Abb. 24.2, 3 and 28). Until chronologically intermediate vessels can be cited, it seems premature to seek the origin of the Rose Ash series in the Hénon bowls; on the other hand, since the absolute dating evidence for Schwappach's Metallstil is by no means very strong, Fox's hypothesis cannot be ruled out.

Another point made by A. Fox (1961: 195) should be considered here, namely her use of the crimped rib motif to suggest that the Rose Ash bowl was made at an earlier date than that from Youlton. However, since the motif can be observed on the Witham shield (No. 322) as well as on Claudio-Néronian brooches (e.g. Brailsford 1962: C 55, C 92), it is clear that it cannot be used to argue fine chronologies. Furthermore, since the Rose Ash and Youlton bowls were both single finds, since the context of the Glastonbury bowl (No. 401) is also of no chronological value, and in view of the uncertainties in dating the Birdlip mirror-burial, it is very doubtful whether A. Fox's sequence for the bowls (Glastonbury - Rose Ash - Birdlip/Youlton) has any real validity.

21.3. Group II. Platters (Nos 391-2)

Two shallow dishes, simply made, have flat bases and appear to have been

finished off on lathes. Another example has been found with the recently discovered hoard from Somerset, Co. Galway (Raftery 1960: 3, Pl. I.158). It is possible that these vessels were based on a Roman prototype, for similar platters are quite common in Roman contexts on the Continent (cf. <sup>6</sup>De Boesterd 1956: types 89, 90). It is also possible that these vessels were in fact imports.

#### 21.4. Group III: Strainers (Nos 394-9)

Three round-based bowls with handles and spouts and the spout of another bowl appear to have been made in Britain. Two of the bowls (Nos 394 and 399) and the spout (No. 396) were found in eastern England, while the fourth (No. 397), an export, was found in Poland. It would therefore appear on present evidence that the type is basically eastern English in distribution, and presumably a regional type. The three bowls have similar profiles - a rounded body, flat based (though No. 399 also has an omphalos), and an everted rim with scarcely any neck below it. The spouts on two of these bowls (Nos 394 and 397) and the spout found singly (No 396) are zoomorphically modelled. These three have a curious feature, a tang protruding over the rim towards the centre of the bowls; this may initially have been designed for structural reasons, that is, to prevent the lids, that partly covered the bowls (as seen on Nos 394 and 399), from opening when the wine was being poured out. All four spouts are turned upwards to prevent the wine from spilling out of the bowl, but they differ in their methods of attachment. Nos 394 and 396 were soldered, while the other two were rivetted onto their bowls. While on No. 397 the sieve is actually

pierced through the body of the vessel itself, on No. 399 an extra plate was fitted inside; the latter arrangement also probably occurred on the strainer from Felmersham (No. 394).

Strainers are a common feature of wine-sets in the Classical world, and many forms are known (Christlein 1964; Eggers 1951, Types 159-62; Den Boesterd 1956: Types 53, 58-64), but only one form is really close to the British series (<sup>den</sup>Boesterd 1956: Type 64; Eggers 1951: Type 90); this is the only Roman form that has a spout incorporated into the design. It also has a bronze lid partly covering the interior in the manner of Nos 394 and 399. Despite the late date assigned to the form by both Eggers and Den Boesterd, the British strainers suggest that a hitherto unrecognised earlier form must have existed in the Roman Empire, or that some of the continental examples were made at an earlier date than Eggers or Boesterd would have considered likely. However, the profiles of Nos. 394 and 397 are strikingly similar to the profiles of 'Aylesford' type pans imported from Italy in the late first century B.C. (J. Werner 1954: 52-4, Taf. 2.4). Zoomorphically-modelled spouts on strainers in the Classical world are less common; Megaw (1963: 31-2, Pl. XVb) drew attention to some relatively early examples in the Graeco-Roman world and illustrated one of them. He (Ibid.: 32, n. 2) also noted a pottery bowl from St. Martin's-le-Grand in London that has an upturned boar's head spout with a strainer-perforation across the internal end of it (Wheeler 1930: 148, Fig. 55.2); this vessel lacks its base, which Wheeler restored with a small footring. The vessel was dated by Wheeler to

probably the first half of the second century A.D.; in contrast to Megaw, however, he did note that such vessels are "not exclusively" of this date. However, Wheeler's dating of this particular vessel is incorrect, for Miss Joanna Morris informs me that the object was found in a Flavian deposit. At Colchester similar, but carinated, spouted vessels of pottery are found in contexts as early as the middle years of the first century A.D. (Hull 1958: 127, Fig. 56. no. 46; Hull 1963: 187, forms 322-3, Fig. 105).

Two other British finds have yielded objects which may have formed parts of spouted strainers of this type; both of them were found in east Anglia. The first (No. 398) appears to be a lid of the Felfersham-Welwyn Garden City type, and has the same-shaped opening as the Welwyn Garden City lid. It is, however, provided with a swivelling cover to the opening, a feature that the Welwyn Garden City lid does not possess. The second (No. 395) is also possibly part of such a lid.

It is possible, too, that the openwork bronze spout-mount and bird-headed ring-handle from Brno-Maloměřice (Sandars 1968: Figs 90-1; Megaw 1970: nos 160 and 159 respectively) may have been fitted to a wooden strainer of the type discussed above rather than, as has been suggested, to a wooden flagon (Hucke 1942), or to a yoke (Radnóti 1958). When the spout-mounting is viewed face on (as in Sandars 1968: Fig. 90), it appears not very dissimilar to the spout on No. 400; indeed, the arrangement of the two faces on the piece is very similar to the two faces on the spout and spout-escutcheon on the bronze bucket-cum-strainer from

?Bolsena (Megaw 1963: Pl. XVb). The two arms protruding from the back of the Brno-Maloměřice spout are very similar to the two that project from the back of the Kirmington spout (No. 399).

In conclusion, it may be noted that a handle of a different form of wine-strainer has been found in southern Britain; this is the bronze thumb-plate from the late pre-Roman Iron Age settlement at Hengistbury Head, Hampshire (Bushe-Fox 1915: Pl. 29.11; Christlein 1964: 17, Nr. 16). Handles of this form are widely distributed in Late La Tène contexts from France to Austria and Bohemia, and were attached to hemi-spherical cup-like strainers (Christlein 1964: 16-8, Abb. 2). Further finds have been published since Christlein's survey, from S. Blandine, Vienne, France (Chapotat 1970: Pls XXIV and XXVI), and from Trísov, Bohemia (Břen 1966: 118-22, Fig. 27, Pl. XXV.6).

#### 21.5. Group IV: Other forms (Nos 400-405)

Six other vessels remain to be considered. All are more or less globular, but no two are as alike as the members of the groups discussed above are to one another.

No. 400 has an incurved neck, with a hole in it for the attachment of a now missing handle or escutcheon. Only the bronze cup from the Keshcarrigan reach of the River Shannon, Co. Leitrim (Jope 1955b: 92-4, Fig. 2.1, Pl. VIIIa), has anything like a similar profile. Both vessels appear to have been finished off on a lathe.

No. 401 is of composite construction and has large domed heads to the rivets that join the upper sheet to the lower. These features, the largeness

of its dimensions, and its globularity render the bowl quite close to No. 404. However, the forms of the rims of these two vessels differ markedly. Nevertheless, it is just possible that they represent a local form of large bowl that was made only in the 'Durotrigian' area of late pre-Roman Iron Age Britain.

The two rounded bowl-fragments from Great Chesterford (No. 402) and Westhall (No. 405) are too incomplete for anything useful to be said about them. On the other hand, the unusual ornamentation of No. 403 deserves notice, even if no parallel can be adduced for the shape of the vessel, for the bands of S-motifs recall the ornamentation of certain kinds of pottery current in western England during the later pre-Roman Iron Age (Peacock 1968: Fig. 3). However none of these pots is similar in shape to No. 403.

Addendum: Since the above was written, a newly discovered bronze spout from a strainer-bowl, found at Brentford, London (Canham 1971: Fig. 2), has come to my attention. The spout, zoomorphically modelled, forms quite a close parallel to the one on No. 394.

## 22. Buckets (Nos 406-25)

### 22.1. Introduction

In this chapter I intend to discuss only those wooden vessels whose mounts are principally of bronze. Fragments of several others have been found, which were bound, or fitted with iron.

Three principal forms of wooden buckets with bronze mounts may be distinguished; fragments of four other unique vessels (Nos 422-5) are also considered.

### 22.2. Group I: Aylesford form (Nos 406-11)

Eight fragmentary wooden stave-built buckets are characterised by elaborately ornamented bronze hoops and mounts. By comparison with restorable Group III specimens considered below, these vessels are large, as much as 620 mm in diameter and 640 mm high (No. 410). All of them appear to have been found in graves, in two instances (Nos 407-9) buried in not quite identical pairs.

Hitherto, it has been assumed that all of them should be restored as No. 410, with horizontal hoops spaced at regular intervals up each vessel; however, a recent study of No. 406 and of the newly-discovered No. 407 (Stead 1971a) has cast doubt on this. In the case of Nos 406-7 it seems very probable that the whole of the exterior of the bucket, as well as the upper part of the interior, was encased in sheet bronze. In this respect, these buckets resemble some of the tankards (Nos 369 and 378); indeed, the design of the hoops on No. 407 is very similar to those on No. 369. As with tankards, we must now recognise that

Group I buckets were sometimes completely, sometimes only partly, covered with sheet bronze hoops.

The method by which the vessels were lifted differs, although at present only two kinds of handle appear to be represented. Nos 406-9 were provided with convex swing-handles, that pivoted on decorative escutcheons raised above the rims. On Nos 406-7, the escutcheons are of cast bronze, modelled in the form of highly stylised human heads. Whilst the design of the handle of No. 411 does not appear to be reconstructable, a pair of diametrically-opposed ring-handles on the wall of the vessel were used to lift No. 410. It seems probable that the iron bar, that was threaded horizontally through the pair of diametrically-opposed rectangles raised above the rim of No. 410, was used to hold a lid; if this was not the function of the bar, I can think of no other use for it.

The masterly reconstruction of the better preserved bucket from Baldock (No. 407) shows that in all probability the vessel was provided with three short-feet; it is also possible that No. 406 was raised up in this manner. For this feature of No. 407, Stead (1971a: 278) drew attention to a pair of bronze-bound wooden buckets from a richly-furnished burial of Augustan date at Goeblingen-Nospelt, Luxembourg (Thill 1967: 92-3, Taf. I. 11-2). Both vessels are close to the British 'Aylesford' form; both are raised on three short feet. The two vessels differ in detail; for example, although both have curved swing-handles, the manner in which the handles are pivoted differs. On one (Thill 1967: Taf I.11), the ends of the handle are turned through a right angle, as on Nos 406-7,



while on the other (Thill 1967: Taf. I.12), the ends of the handle are horizontally pierced and pivot on separately made rivets in a manner akin to the handles on Nos 408-9. Stead (1971a: 278, 281 n. 30) compared the feet on these buckets with those on certain Classical bronze situlae, and suggested that this feature may have been adopted from Classical design, but the comparison is not particularly close. Moreover, the presence of part of a stave-built vessel with short feet just like those on No. 407 at the 'Glastonbury Lake Village' (Bulleid and Gray 1911: 313, Fig. 65) may indicate that the provision of short feet on wooden buckets was a well-established northern European practice.

I do not intend to consider in detail the arguments that have been advanced concerning the place of manufacture of Nos 406 and 410. It has long been argued that both of these vessels were imported from Gaul (Megaw 1968a: 36-7). However, whilst the style of their ornamentation has strong continental affinities, with, inter alia, certain coins and the 'Swiss' sword-scabbard style', until the recent discovery of the Goeblingen-Nospelt buckets no vessel of the Aylesford form could be indicated as a continental model. Even these vessels do not compare closely in the form of their ornamentation; moreover, they cannot be dated any earlier than the British series, for the burial in which they were found contains precisely the same kind of imported Italian bronze vessels as were found in the Aylesford burial (Thill 1967: 89-90, B19 and 49b, Taf. I.1, 4, IV.2, V.2, VI.1, 2). Until a group of buckets ornamented in precisely the same manner as Nos 406 and 410, that can be shown to be significantly

earlier than these two vessels, is discovered on the Continent, I consider the case for regarding them as imported from Gaul or anywhere else to be non-proven. Moreover, it should be noted that at present more 'Aylesford' buckets are known from south-eastern England than from the whole of the Continent put together. That the ornament of the plainer specimens (Nos 407-9, 411) is insular rather than continental in character would seem to strengthen the case for considering Nos 406 and 410 to have been made in Britain. However, I would not play down the extent of the continental stylistic influence that can be indicated on these two vessels (Megaw 1970: nos 187-8).

### 22.3. Group II: Buckets with animal -escutcheons (Nos 412-5)

Wooden buckets with handle-escutcheons modelled in the form of heads of animals, particularly bovines, were made in Britain in the late pre-Roman Iron Age as well as throughout the Roman period. Indeed, because they were made for the best part of half a millenium it is often difficult to determine the dates of individual specimens, particularly those that have not been found in association with other datable objects. Four examples are described in the Catalogue (Nos 412-5); datable to the late pre-Roman Iron Age, whilst the other two are probably better considered as pre-Roman, rather than Roman, in date on account of their stylistic affinities. Since these affinities have been noted elsewhere by other writers, I do not intend to repeat them here.

### 22.4. Group III: Buckets with vertical struts (Nos 416-21)

A kind of bucket that is particularly common in northern Europe in the

(post-Roman) Migration Period has not hitherto been recognised to have been made in Britain in the pre-Roman Iron Age. This form had a series of regularly-spaced bronze hoops, vertical struts, and a simple bronze handle. Fragments of these mounts have been found at six sites in southern England in late pre-Roman Iron Age contexts (Nos 416-21). It would seem that the vessels to which these mounts were fitted, were similar to the buckets with vertical struts and horizontal hoops so commonly found in Migration Period burials, as in the Merovingien princess's grave recently discovered in Cologne Cathedral (J. Werner 1964: Fig. 5.1). Whether or not such vessels continued to be made through the Roman Iron Age is uncertain, for, although I have not been able to discover any examples of this date, it is possible that some may exist in northern European museums; it should also be noted that, as far as I know, no specimens have been found in late La Tène contexts on the Continent.

#### 22.5. Group IV: Other forms of bronze bucket-mounts (Nos 422-5)

Four bucket finds remain, since I have not been able to find parallels for any of them either in Britain or on the Continent I merely wish to draw attention to their apparent uniqueness, in the hope that someone may be able to recognise fragments of similar vessels in either of British or a foreign museum.

## 23. Cauldrons (Nos 426-30)

### 23.1. Introduction

Several cauldrons of native tradition dating to the pre-Roman and Roman Iron Ages have been found in Britain, most of them in the north. Since so many of them have been found singly, one cannot always be sure of their precise dates; this problem is particularly acute for those of simple globular form. Some of these could belong anywhere in time from the latter half of the first millennium B.C. to the latter half of the first millennium A.D.

I divide the British cauldrons into four main groups, numbered I to IV. Since I have not seen it, the cauldron from the recently-discovered richly-furnished late pre-Roman Iron Age burial at Baldock, Hertfordshire, is not included in the present discussion.

### 23.2. Group I: Santon form

This form of cauldron is distinguished by a more or less vertical neck and bulging belly. Each specimen had an iron rim and two iron ring-handles, and was made of more than one sheet of bronze; the pieces of bronze were riveted together.

Three cauldrons of this form have been found in Britain, two from the north, and one from the south (No. 429). Whilst No. 429 is complete, although badly damaged, the two northern specimens, from Carlingwark Lock, Kirkcudbrightshire (Piggott 1955a: 28, Fig. 7), and Bewcastle, Cumberland (Feachem 1965: 229, Pl. IIb), have lost their iron mounts on account of preferential corrosion in the watery deposits into which they were

thrown. Two other specimens of this form have been found in Ireland (Armstrong 1923: Fig. 13); these two have also lost their iron mounts on account of preferential corrosion. Whilst the Bewcastle and the two Irish cauldrons were found singly, both No. 429 and the cauldron from Carlingwark Loch contained hoards of metalwork; objects inside these two cauldrons indicate that the former was deposited in the middle years of the first century A.D., and the latter sometime during the Roman Iron Age.

### 23.3. Group II: Battersea form

In discussing the cauldron from Blackburn Mill, Cockburnspath, Berwickshire, Piggott (1955a: 13, 40-1) distinguished a group of cauldrons of globular profile which he named after the specimen from the Battersea reach of the River Thames (No. 426). Included in the type-list were several cauldrons which, however, differ in certain details. I have divided these cauldrons into three groups, after the specimens from Battersea, Blackburn Mill, and Elvanfoot, Lanarkshire; the three groups are numbered II, III, and IV, respectively.

I include Nos 426 and 430 as specimens of Group II. An iron cauldron-rim from Letchworth, Hertfordshire (Moss-Eccardt 1965), may have belonged to a vessel of this form. In fact, it cannot be regarded as certain that Nos 426 and 430 were originally globular; it seems more likely that they are the bases of composite cauldrons of which the upper parts have been lost. If, as I believe, they are the bases of cauldrons, then it is probable that the upper parts would have been of wrought sheet iron.

Later La Tène cauldrons made in this way, with upper and lower sections of different metals, have been found on the Continent, for example, at La Tène (Vouga 1923: Pl. XXVII.2) and in the 'Germanic' zone (Eggers 1951: Taf. 2.5). The upper parts of Nos 426 and 430, if of iron, would have been lost as a result of preferential corrosion. These upper sections could either have been vertical or inward-sloping. Their height cannot easily be estimated; they could have been as short as the upper section of a cauldron from Letchworth (Moss-Eccardt 1965).

#### 23.4. Group III: Blackburn Mill form

Cauldrons made of a single sheet of bronze and provided with ring-handles and iron rims are represented by five complete and fragmentary vessels from Britain. Whilst three have been found in Scotland, two at Blackburn Mill, Berwickshire, and one at Kyleakin, Skye (Piggott 1955a: 40-1), two fragmentary cauldrons have been found in southern Britain at Llyn Cerrig Bach (Nos 427-8). Although none of them now has iron mounts, it is reasonable to suppose that their absence is not an original feature and that they have been lost as a result of preferential corrosion, for it is difficult to see how the vessels could otherwise have been suspended or to account for the absence of rim- and handle-fittings had these been of cast bronze; moreover, it is clear that the suspension-fittings have not been torn off these five cauldrons.

#### 23.5. Group IV: Elvanfoot form

A different kind of globular cauldron is represented by four near-complete vessels from northern Britain. These cauldrons have short upstanding rims

with holes pierced through them for the attachment of iron rims; it seems likely that ring-handles were attached to such rims, for there is no visible means of attaching handles to the cauldron in any other position. The iron fittings to these cauldrons do not survive, an absence that can again be accounted for by the agency of preferential corrosion. Three of the cauldrons have been found in Scotland - at Abercairney, Perthshire, Elvanfoot, Lanarkshire, and Whitemills Moss, Dumfriesshire (Burns 1969) - and one in England at Alnwick Moor, Northumberland (Piggott 1955a: 40). Since there are reasonable grounds for supposing that all of them were found in lakes or peat-bogs, the preferential-corrosion hypothesis advanced above to account for the present absence of iron fittings seems more probable. The three Scottish vessels share the unusual decorative technique, not found on any other British cauldron, of a surface covered with low raised bosses raised from the back. I know of no parallel for this technique. Despite the fact that I have included these four vessels in this discussion of pre-Roman Iron Age cauldrons, it must be emphasised that, since all four were found singly, one cannot exclude the possibility that they may have been made in Roman or later times rather than in the pre-Roman Iron Age.

## 24. Miscellaneous sheet mounts (Nos 431-57)

### 24.1. Introduction

Numerous pieces of thin sheet bronze have been found in southern Britain, that bear ornament assignable to late pre-Roman Iron Age tradition. Many of these objects are square or rectangular in outline, whilst others are rounded; other shapes are also known. All but one (No. 456) of those listed in the Catalogue were once mounted on flat surfaces, I have divided these mounts into two principal groups: those that are rectangular or square in outline and that have relief ornament (Group I), and other forms (Group II).

### 24.2. Group I: Strips and squares with relief ornament (Nos 431-47)

A series of squares and rectangular strips bears relief ornament that is generally symmetrical about one or more axes; on each mount the relief motifs are framed by raised ridges. On most of the rectangular pieces (Nos 432-42, 445-6), motifs are repeated and frequently linked to each other by scrolls; from measurement it is clear that on at least Nos 433-5, 437-42 and 445-6, each motif is absolutely identical and was produced by hammering the metal into dies of the kind found in the Santon hoard (Spratling 1970a: Fig. 4, top right, and bottom right) and at Wroxeter (D. Atkinson 1942: 216-8, B230, Pl. LII). Despite the closeness of their designs, the relief whorls on Nos 434-5 were not produced with the same die, as Megaw (in Megaw and Merrifield 1970: 157, n. 16) has recently claimed, since the whorls on these two pieces differ considerably in size.



It is far from certain what objects these mounts once adorned, although No. 446 was reported by its discoverer to have adorned an oaken casket. Following this, it has been assumed (C. Fox 1958: 105) that many of the others may also have adorned <sup>caskets</sup>; however, there is no evidence for this. C. Fox (1947a: 23) has offered an alternative explanation for at least some of these mounts. On a far from close analogy with a series of ornamental thin bronze panels from a Etruscan chariot-burial, he suggested that No. 437 had been fitted to the side of a chariot; despite the weakness of the analogy, this view has been accepted, for example, by MacGregor (1962: 33).

#### 24.3. Group II: Other forms (Nos 448-57)

These other sheet bronze mounts are all different in shape. Since all of these mounts have been found singly, it does not seem possible to identify the function of the objects that they formerly adorned. However, C. Fox (1958: 126-7) has suggested that No. 456 was once attached to a hame; in doing so, he compared the piece to the curved openwork mounts from La Bouvandeau which were considered by Jacobsthal (1944: no. 171) to have been 'hame-mountings'. This, however, as Piggott (1969: 380-1) has indicated, is a gross anachronism, for hames are first found in Europe late in the first millennium A.D.

## 25. Ornamental studs (Nos 458-69)

A number of studs, mostly circular and domed, and most of them enamelled, has been found either singly or mounted on other objects. Their prime purpose was clearly decorative, but in many cases it is not clear what they were intended to adorn. Twenty-seven once adorned the Battersea shield (No. 305), while others were mounted on a vessel-handle from Welwyn (No. 381A), the hilt of a sword from Thorpe, East Riding (Greenwell 1906: Fig. 8), and the Group IXA terret from Pentyrch (No. 84). Those from Hertford Heath (No. 461) and Lexden (No. 465) were affixed by means of a kind of calcareous adhesive to ornamental sheeting. The Chichester, Ham Hill, and Lydney studs (Nos 459, 460 and 466 respectively) must also have been attached with a kind of adhesive, since none of them has a central hole for a rivet; the same is true of the studs on the Pentyrch terret and Thorpe sword-hilt. All the others were attached by means of rivets passing through their centres. The all-bronze stud from Putney (No. 133) was inserted inside a 'horn-cap' and was riveted onto the end of whatever the 'horn-cap' itself was fitted to (cf. Chapter 4.3.); a very similar all-bronze stud from Islip (No. 463) might also therefore have been inside a 'horn-cap', though of that there can be no proof.

All the other studs included here (Nos 458-60, 462, 464, 466-9) were found singly, dismounted from the objects which they originally ornamented. The more or less triangular facet on the basal ring of the Whitton stud (No. 467) suggests that the stud was once set onto a triangular projection; this and the central rivet-hole refute Savory's hypothesis (1966: 42) that the

stud was once attached to a terret of the Pentyrch type since both features are absent on the Pentyrch terret (No. 84). The Meare stud (No. 469) was attached by means of its central rivet to an object not more than 2.5 mm thick. The two diametrically-opposed rivets that pass through the annular frame project only minutely beyond the back of the stud; this might indicate that the frame once covered a separately made ring of plano-convex section. The slight convexity of the Cavenham stud (No. 468) suggests that the stud was once mounted on a slightly convex surface; the surviving rivet indicates that the object to which the stud was attached was no more than 3 mm thick.

Not only are the objects to which they were once mounted very varied, but so also are the techniques of manufacture and the designs of the studs. Most of the studs (Nos 458-67) are circular and domed (Group I); two others (Nos 468-9) are of other shapes (Group II). Of Group I, Nos 458, 464, 467, and those on the Pentyrch terret (No. 84) are of hollow cast bronze with excised insets or pierced openings for enamel; these studs are either hemi-spherical, or slightly more than hemi-spherical, in shape. However, most of the Group I studs are flatter in form; although domed, they are much less than hemi-spherical, and were ~~cast~~ to shape, probably by sinking discs of sheet metal into cupped moulds. Whilst two (Nos 133 and 463) are wholly of bronze and have false-relief curvilinear ornament, the others (Nos 459-62, 465-6, and those on No. 305 and the Thorpe sword-hilt) have an open fretted frame filled with red enamel inserted as a paste at the back. A frame of the latter group, with its enamel backing now missing,

was found at Arras, East Riding (Greenwell 1906: 283-4, Fig. 27), unfortunately with no recorded associations (Stead 1965a: 103, no. 20). The frames of this latter group are of many different designs, though all are contained within circles. Fretted open frames with enamel inserted at the back are also found on the Continent, for example, on the lid of one of the La Tène A flagons from Basse-Yutz (Jacobsthal 1944: Pl. 181, top right), on the upturned feet of brooches from Giubiasco and Sanzeno (Krämer 1961b: Taf. 42.2-3 and 43.2), and in a La Tène B grave at Nebringen (Krämer 1964b: 25, Grab 5, Nr 21, Taf. 9.A.21 and 15.15). The Nebringen stud is unusual in that the frame is of iron; on all other examples of this type of stud known to the writer the frame is of bronze. Moreover, the Nebringen stud may once have adorned a shield; if so, it would provide an interesting continental analogy for the studs on No. 305.

The studs from Cavenham and Meare (Nos 468-9) are each unique. However, the technique of backing an enamel dome with bitumen, that is seen on No. 469, may be paralleled on the Battersea shield (No. 305) and on the discs from Bugthorpe (C. Fox 1958: Pl. 11c; Stead 1965a: Fig. 36.2 and 3). This technique appears to be of continental origin; it may be observed for example on the lids of the La Tène A Basse-Yutz flagons (R.A. Smith 1929: 7).

## 26. 'Spoons' (Nos 470-6).

### 26.1 Classification

Of the twenty-three bronzes referred to as 'spoons', eleven have been found in southern Britain; the others have been found in northern Britain, Ireland and France (Craw 1924; Raftery 1951: Fig. 231). Each 'spoon' is characterised by a shallow scoop or bowl of concavo-convex profile, pointed at one end and rounded at the other; the bowls range from the relatively thin and consequently sharply pointed to the relatively wide and bluntly pointed.

The handles, joined onto the rounded ends of the bowls, are of various shapes, and may be used to define groups. Whereas the handles of the pair from Pogany in France are nearly square with concave sides (Craw 1924: 150, nos 20-1, Fig. 4), the British and Irish series are characterised by rounded handles. With the exception of No. 470 and the pair from Burnmouth, Berwickshire (Craw 1924), the British and Irish spoons have in addition a pair of 'wings' on either side of the junction of the handle with the bowl. The six Irish examples (Craw 1924: 150, nos 15-19, Fig. 4; Raftery 1951: Fig. 231) and Nos 471-3, 476A and B have small wings, while Nos 474-5 have large wings. On the pair of spoons from Crosby Ravensworth (Craw 1924: 149, nos 11-12, Fig. 4; Brailsford 1953: 70, Pl. XXII.6), the wings have been coalesced with the disc-handle to produce a handle of continuous, unbroken outline, although the separate elements are still distinguished by engraved lines.

The spoons with small wings may be divided into two regional series:

the British examples differ from all but one of the Irish in that the overall width of the spoon at the wings is less than the maximum width (= the diameter) of the circular 'head', whereas in Ireland the converse is true. Furthermore, the 'heads' of the British spoons with small wings are circular, whereas with one exception those from Ireland are only partly rounded. Finally, all but one of the bowls of the Irish spoons are proportionately thinner than the British. Expressed as percentages, the maximum widths of the bowls in relation to their lengths are as follows: the Irish fall in the range 67 to 76%, and the British in the range 77 to 89%. The one Irish exception, at 84%, is the same specimen that has already proved in two earlier respects to be closer to the British than to the Irish small-winged spoons. It should be noted that the same proportions of the French pair of spoons are 72 and 74%.

It is possible that the British examples form a typological series, starting with the wingless Andover-Burnmouth type (the Andover spoon appears to have 'proto-wings'), and proceeding successively through the small- and large-winged types, to the type represented by the Crosby Ravensworth spoons, where the wings have been incorporated, with the disc-head, into a handle of unbroken outline. As Craw (1924: 146) has suggested, the purpose of the larger wings may well have been to strengthen the join of the head with the bowl, a weak point on many of the spoons, as the repair on No. 471 indicates. But, however attractive this typology may appear, there is no contextual dating evidence to support it, for none of the spoons has been found with closely datable artefacts of other

kinds; indeed most of the spoons were found singly. The sequence could be taken at face value, e.g. No. 470 was made at an earlier date than No. 475; alternatively, it could be argued that the sequence merely represents the way that the forms came to be developed, with no absolute chronological implications for the several surviving specimens. On the other hand, it could be argued that the Andover-Burnmouth type was the latest form, developed from the Crosby Ravensworth type; but to argue that those with large wings were first made before those with small wings would seem less satisfactory, for it would be strange (though not impossible) for a structurally weaker form to be developed from a stronger one. The only possible criteria for dating the spoons are the different manners in which their ornamental patterns are treated.

#### 26.2. Function

The original functions of these spoons are not known. Many of them have been found in pairs. In each pair the spoons always differ: one of them has a cross engraved or chased on the bowl, while the other has a perforation close to or on one side approximately half-way down the bowl. In each case, the handle is more or less profusely ornamented, differently on each spoon in each pair. Although they are broadly similar to certain spoons or scoops of other periods, the perforation in the bowl of one of each pair of spoons would seem to suggest that their function was different. The perforation is unlikely to have been intended for suspending the spoon, for on some spoons it is right on the edge (Nos 471, 472B, 473B, and 476B); it would rather seem that the hole was connected with the use of the spoon,

that is, with emptying the bowl of its contents. That the 'spoons' were actually held by their handles is suggested by the wear on the handle of No. 475; part of the inner incised line on the circular head has been worn away. The position of the wear-facet indicates that it was worn away by the thumb of a right-handed person holding the handle between his thumb (on the obverse) and his fore-finger (at the back). The location of the perforation on the bowl of this spoon within the peripheral ridge would have made much easier the pouring out of any contents. The location of the perforation on this and other spoons on the sinister edge of the bowl indicates that they were designed for right-handed people. In connection with the use of these perforated spoons, it is of interest to note that "Mr. A. J. H. Edwards, F.S.A., Scot., made an experiment with a shallow spoon in which a small perforation had been drilled. He found that, while water would not run through it, oil flowed freely through the perforation" (Craw 1924: 146, fn. 2). It is possible that the contents of these perforated spoons may have been poured into those that are not perforated.

In at least three instances, pairs of spoons have been found in burials. At Pogny, Marne, they were placed one on top of the other (and probably wrapped in cloth) in a bronze vessel, while at Deal (Nos 472A and B), they were found on either side of the head of the inhumed skeleton. At Burnmouth they were laid flat next to each other in front of the face of the inhumed skeleton (Craw 1924: Fig. 1).



## 27. Weighing-devices and weights (Nos 477-82)

### 27.1. Weighing-devices

Both the balance and the steelyard are represented in the southern British late pre-Roman Iron Age. Whilst the former was of high antiquity and was widely used in the La Tène world (e.g. Šimek 1958: Obr. 21.8 and 26), the latter is generally considered to have been invented in the Roman Empire in the first century B.C. (Skinner 1967: 76-8; Vitruvius, De architectura, X. iii.4). If this opinion is correct, it is striking how quickly the steelyard was adopted over a very wide area, for it is clear from the Santon find (Nos 478A-C) that it was being made, as well as used, in Britain by the middle of the first century A.D. However, in view of the fact that the Santon hoard was not deposited until after the Claudian Invasion, one cannot at present argue that steelyards were being made in Britain before this date, even though the ornamentation of Nos 478A-C indicates that they were of native manufacture. Nevertheless, it is apparent that the steelyard was an old piece when it was incorporated in this hoard, for the pan and weight (Nos 478B and C) had been broken up as scrap-metal.

Whilst no other steelyard is known to have been made by a native smith at such an early date in Britain, it is of interest that the form and dimensions of the Santon pan (No. 478B) provide an almost identical parallel for the ornamented bronze disc dredged from the River Bann near Coleraine (Raftery 1940; Jope and Wilson 1957; O'Kelly 1961: 10-12). Jope and Wilson (1957: 99-100) argued that the disc had been used either as a breast ornament or even possibly as the central member of a ceremonial head-dress like those

of Roman date from Cavenham Heath, Suffolk, and Stony Stratford, Buckinghamshire (Layard 1925: Pl. XXVIII); but the analogies are not particularly close. In view of the closeness of No. 478B to the Bann disc, it seems that one of the explanations of the latter's function made by Raftery (1940: 28-9), that it was used as a weighing-pan with a steelyard, is more likely to be correct. If this argument is accepted, then the Bann disc appears to be the earliest weighing-device yet discovered in Ireland.

It is unfortunate that the Santon weight (No. 478C) is so badly damaged, for this prevents us from determining the standard to which it was calibrated. The scale calibrated on the Santon steelyard-beam (No. 478A) is curious, for there does not appear to be any regularity of measurement separating the individual points marked along the beam, for the separations vary from 16 to 25 mm in an irregular manner. The steelyard differs from most Roman steelyards in that there is only one detailed scale; the other scale only has one mark. Most Roman steelyards have at least two scales, each of them very regularly divided (Paret 1939; Nuber 1967).

Two equal-armed balance beams (Nos 478D and 482) have been found in native contexts. Moreover, a folded-up bronze disc with regularly-spaced peripheral suspension-points from Snettisham (No. 480) may have been a balance-pan.

### 27.2. Weights

Besides the steelyard-travelling weight in the Santon hoard (No. 478C), several balance-weights have been found, that appear to conform to 'Celtic' standards.

One of these standards is represented by No. 479 and by two other weights from Basel and Mainz (R.A. Smith 1905b: 189-90; Schwarz 1964: 156); this standard is about 4770 grains or 309 grams. Despite Hawkes and Hull (1947: 333), No. 477A is precisely one-eighth of this figure; the two dots on one of the faces of No. 477A may indicate that it was considered either as half of a quarter, or as twice one-sixteenth of this standard.

Another standard is represented by No. 477B, by two weights from Avenches, Switzerland (Schwarz 1964: 151-4, weights A and C), by one from Basel (Ibid.: 156), and by one from the Magdalensberg, Austria (Egger 1966); in this case, the basic unit is about 638 grams. No. 477B, at 1957 grains (= 126.8 grams), is one-fifth of this figure; the five dots on one of the faces of this weight corroborates this. A lead weight from Glastonbury (Bulleid and Gray 1911: 246, Fig. 48, L12) is almost identical to No. 477B, for it weighs 1962 grains (= 127.1 grams); it too must have been one-fifth of this standard.

However, at 116.21 grains (= 7.5 grams), No. 481 does not seem to be closely compatible with either of these units. The two dots on one of its faces should indicate that it represents either two sub-units or half a sub-unit. If it had been intended as half of one-twentieth of the Basel-Mainz-Seven Sisters standard, the deviation from the true value (119-25 grains) would have been less than several of the weights from Melandra Castle, Derbyshire, that are assumed to have been calibrated according to this standard (Conway 1906; D.F. Allen 1961: 302); it may be noted that the weight of No. 481 falls within the weight-range of Allen's Gallo-Belgic A staters (D.F. Allen 1961: 303, 305). The division of units into twentieths is

attested elsewhere in 'Celtic' weighing-systems (Schwarz 1964: 152-3).

28. Miscellaneous objects (Nos 483-8)

The six objects that remain are of uncertain function. They have been included in the Catalogue primarily because of their decorative interest.

The only objects about whose forms I can find anything of interest to say are the two decorated bronze rings of asymmetric thickness from Abington Pigotts and the Breiddin hillfort (Nos 483-4). Both have eccentric openings. I know of one other ring of this kind that has been found in Britain, an apparently ornamented example, that I have not seen, from Milber Down, Devon; the published photograph is too blurred for one to distinguish the relief pattern on this ring (A. Fox, Radford, Rogers and Shorter 1954: 44, Pl. XIV, bottom right). On all three rings the relief ornament is concentrated on the thicker part of the ring. The purpose of these rings is far from clear; for example they cannot have been finger- or toe-rings, since the openings are too small. Similar cast bronze rings of uneven thickness all the way round, and ornamented in relief on the thicker part, have been found on the continent, for example, at the Late La Tène oppidum of Stradonice near Beroun in Czechoslovakia (Filip 1956: Tab. CXXVII.32). It is, of course, possible that these rings were suspended on necklaces.

## 29. Technology

### 29.1. Introduction

This chapter is devoted to an outline assessment of the range of techniques used in the manufacture of the objects that are the subject of this thesis. The discussion that follows and the information that is recorded in the Catalogue are based predominantly on macroscopic examination, the principal aid to this being a hand-lens of X12 magnification, although on occasion I have had access to binocular microscopes of low power, that is, not more than X20 magnification. In view of their paucity, no account is taken in this discussion of metallographic examinations nor of analyses of the alloys used in the production of bronzes.

This chapter is divided into three parts, in which the primary, structural techniques are considered first, followed by a discussion of the techniques of ornamentation. In the latter part, the discussion excludes ornament which was produced in the processes that took place before casting. In the final section, attention is drawn to the principal technical innovations in bronze-working in the southern British late pre-Roman Iron Age.

### 29.2. Structural processes

#### 29.2.1. Casting

Very little direct information is available concerning the methods of bronze-casting employed in the southern British late pre-Roman Iron Age, since no moulds have survived, and since all the objects of cast metal, that are the subject of this thesis, have been very carefully finished, thus

removing such features as flashes. It may, however, be noted that part of a (now lost) sandstone mould, possibly for casting Group I terrets, was found more than a century ago at Camelford in Cornwall (Proc. Soc. Antiq. London, ser. 1, 4 (1856-9): 148). Sheppard (1941: 5) follows H.R. Hughes (1872: 557) in claiming that this mould was used for the manufacture of a kind of Late Bronze Age buckle, but it seems far more likely, from the comments of J. Evans (1881: 438), that the mould was intended for the casting of Group I terrets. It may also be noted, in passing, that fragments of numerous Iron Age clay moulds have been discovered at Traprain Law (Burley 1958: 219-21). Whilst no moulds appear to have been found in southern British late pre-Roman Iron Age deposits, crucibles are quite a common find; Tylecote (1962: 130-41) has listed and discussed many of the known specimens. Despite the lack of moulds, and despite the fine finish of the bronzes, their designs enable certain inferences to be drawn concerning the methods of casting.

'Open' moulds were very probably used for casting ingots, like those in the Seven Sisters hoard (J.R. Allen 1905: Fig. 21), and the partly deformed specimens in the Ringstead and Somerset hoards (R.R. Clarke 1951b: 223, Pl. XIXb; Raftery 1960: 4-5, Pl. I. 163). These moulds may also have been used in the casting of such flat-backed objects as Nos. 100-1, 103, 203-8, 210, 355 and 487. It is possible that strap-loops on the backs of Nos. 203-8 and 210 were added after the plates themselves had been cast.

Simple two-piece moulds could have been used for casting many objects, for example, the smaller Group VIII A terrets (Nos. 64-71, 73-6). However, more complex objects, like the largest Group VIII A terret in the Westhall hoard (No. 72) and the Group VII terrets (Nos. 50 tres - 63), would have required moulds of either multiple piece or solid construction; the latter would have been made by the cire perdue technique.

The design of the mould used in the casting of any particular object is to a large extent determined by two factors: the complexity of design, and the number of castings required. Where more than one casting is needed at the same time, as in the manufacture of a set of four identical terrets, it is likely that, to save the expenditure of effort, a craftsman would make use of a master-mould and/or a pattern, rather than of a single mould for four successive castings. Tylecote (1962: 123-8) has shown that both master-moulds and patterns were used in the north-west European Late Bronze Age; lead patterns were used in Roman and later times in Britain, as is indicated by those for a knobbed terret from Castledykes (Robertson 1964: 166, Pl. 12), for a harness-trapping from Sandy, Bedfordshire (Unpublished: B. M. P. R. B. 1915: 12-8. 310), and for a penannular brooch from Dinas Powys (Alcock 1963a: 120-2, Fig. 23. 2, Pl. VII B.1). These patterns would have been used to make several moulds, so that many identical pieces would have been cast in a single operation. In view of the fact that lead patterns were used both before and after the pre-Roman Iron Age, it seems reasonable to conclude



that they were also used during it. The slight differences that occur on the several members of sets of otherwise identical pieces (e.g. Nos. 55, 62, 73-5), might well have been caused by the differential closeness of fit of the moulds around the patterns and by differential fettling. The identical nature of the two side-rings of No. 180 argues strongly for the use of a single pattern in their manufacture.

I have suggested (chapter 4.1) that the perfect circularity of 'horn-caps' (Nos. 119-35) may well indicate the patterns, around which the casting-moulds were invested, were turned on lathes; in which case it is probable that the patterns were of wood. Wooden patterns were used in the manufacture of bronzes in the Late Bronze Age of the British Isles (Tylecote 1962: 122). The skill in smithing displayed by the 'horn-caps' is no mean one, requiring considerable skill not only in casting, but also in making the patterns and moulds, as is demonstrated by the tightness of fit of the constituent parts of Nos. 123, 128 and 131. It is possible that composite construction was resorted to, as a result of the difficulties experienced in attempting to cast 'horn-caps' in one piece. Indeed, it may be no coincidence that the only surviving specimen with casting-flaws is No. 120, the only 'horn-cap' that was made in one piece; in this instance, it was evidently considered preferable to repair the fabric by running in additional metal than to attempt a re-casting. It may be noted that this is not the only instance of the running-in of molten metal to repair flaws in casting; the same technique may be observed on Nos. 98 and 137B, both of which are also hollow castings, as well as on the

damaged base of the wrought bowl from Rose Ash (No. 389).

The use of cores in casting is indicated by those cast objects that are hollow, not only 'horn-caps', but also baluster ferrules, and certain hilt-mounts (Nos. 286 and 289), and by certain structural features of various other objects, for example, the transverse perforations through 'cheekpieces' and the upper terminals of linch-pins. The inclusion of cores in casting also served other purposes, for example, to save metal (No. 232) or to make the objects lighter (No. 478C); the core is still present inside No. 232.

Molten metal was also used to effect joins, by the technique of 'casting-on'. This, as Drescher (1958) has shown, was a common technique in prehistoric Europe; in Britain it was first used in the Late Bronze Age (Tylecote 1962: 152-3). In the southern British late pre-Roman Iron Age its most widespread use was in the manufacture of bronze scabbard-chapes which were cast directly onto the lower ends of scabbard-frames. On the finest scabbards (e.g. Nos. 252 and 271) the operation was extremely skilfully effected, the join between the cast and the wrought metal being very difficult to detect even with the aid of a hand-lens of X12 magnification. However, on others (e.g. Nos. 266 and 281), many blow-holes may be observed close to the junction between the cast and wrought metal. In one or two cases (e.g. No. 268), the joining was wholly unsuccessful and had to be effected with rivets. Casting-on may also be observed on a linch-pin (No. 107), on Group I bits of eastern English tradition (Nos. 159-61), and on the handle of a

mirror (No. 345). No. 107 is unusual in that bronze was cast onto iron rather than onto bronze; on the handle of No. 345 casting-on was used to provide a key for an iron tang that once held on a bone replacement for the lower part of the handle.

#### 29.2.2. Cold working

During the late pre-Roman Iron Age, the art of cold-working bronze reached an extremely high standard in southern Britain, as the Battersea and Witham shields (Nos. 305 and 322) bear ample witness. Cold-worked metal, hammered out into sheets, was used both in its own right, as for the making of vessels and mirror-plates, and as facing, cladding or ornamentation of other objects, as on shields and wooden vessels.

The first stage in making sheet bronze was the casting of a suitable ingot, preferably a slab, which could be hammered out to the required size and thickness. An early stage in this process is demonstrated by two partly-deformed slabs of bronze, both worked over with cross-plane hammers, one of them in the Ringstead hoard (R. R. Clarke 1951b: 223, Pl. XIXb), the other in the hoard from Somerset, Co. Galway (Raftery 1960: 4-5, Pl. I. 163).

Sometimes extremely large sheets of metal were beaten out. The two facing-plates on the Witham shield (No. 322) each measure 1180 mm in length; the thickness of the metal is extremely even, varying from 0.2 to 0.3 mm. Beating out such large sheets so finely would have been an arduous and skilful process. The evenness of the metal's gauge is striking not only here, but on many other flat pieces of sheet bronze.

With the exception of a cast platter, perhaps an import (No. 391), neither casting nor spinning appears to have been used in the shaping of bronze vessels, although some bowls, for example, those of Rose Ash type (Nos. 385 and 389-90), were finished off on lathes. The very regularly engraved grooves on the rims of these and other bowls (Nos. 397, 400-2) were worked as the vessels were turned on lathes. Whilst some of the vessels (Nos. 385, 389-90, 397) were almost certainly sunk from discs of bronze, others like the lower part of the Santon cauldron (No. 429) were probably raised up. The all-bronze shield-bosses were probably formed by sinking, for hammer-facets are clearly visible inside (i. e. at the back of) those on Nos. 305 and 321. Nevertheless, parts of them were effected by external work, for example the central depressions. It is quite probable that such shield-mounts as Nos. 308, 310, 313, 318-9 were hammered out over the bosses and the spines that they were intended to adorn, even though hammer-facets are very clear at the back of No. 317. A combination of external and internal work is evident on most of the shield-boss mounts.

### 29.2.3. Plating

Only a few of the bronzes listed in the Catalogue have been coated with another metal. It has been claimed that both gold and tin were used in this way on some of these bronzes. However, since an early report that No. 305 had been gilded must now be discounted, doubt must be cast on the report of an analysis, made at the same time as the false one of No. 305, which claimed that the bronze mount on No. 285 had also been

gilded. Nevertheless, it may be noted that some of the bronzes in the 'Stanwick' hoard had been gilded (MacGregor 1962: 20).

Tin-plating is attested on two mounts from Moel Hiraddug (Nos. 326A and B), on some of the mounts from the Tal-y-llyn shield (No. 319), and on a set of bucket-mounts in the Santon hoard (No. 425).

The technique by which the tin was applied, has not been established but is likely to have been by fusion-plating, a technique recorded on early Medieval objects (Jope 1957; Tylecote 1962: 156).

It may be noted that plating of bronze onto iron occurs in the late pre-Roman Iron Age, for example, on a ring from the Hertford Heath burial (in B. M. P. R. B.), on certain Group I bridle-bits, an incomplete bit from Llyn Cerrig Bach (C. Fox 1947a: Nos. 47-8), one from the Thames at Strand-on-the-Green (L. M. : O. 1761), and No. 160.

Cognate with the plating of metal is the sheathing of it in another metal. This technique was commonly employed on Group I bridle-bits (Nos. 149-57, 159, 161-3), on which the iron side-rings were sheathed in strips of sheet bronze. All of the sheaths, but those on No. 149 and a ring from Llyn Cerrig Bach (C. Fox 1947a: No. 49), whose joints were crimped, had simple butt-joints.

#### 29.2.4. Joining

Perhaps the simplest kind of joining is to slot one piece into another; it was used to fit bronze terminals onto the iron shanks of linch-pins, as well as for fitting together the constituent parts of many 'horn-caps'. Nevertheless, in the case of the latter, hammering was sometimes used

to make the joints more secure, as can be seen on the top of No. 129. Another simple kind of joint is to be seen on scabbards where the edges of one of the plates is folded over the other for much of their lengths. The channeled edging of scabbard-frames are a modification of this kind of joint.

Whilst casting-on was a relatively common technique of joining (see Chapter 29.2.1.), soldering was evidently rare in the southern British late pre-Roman Iron Age, despite its widespread use at this time in the Classical World. The technique may be observed on Nos. 394 and 398 only. It is of interest that soldering was used in the manufacture of the Tattershall Ferry carnyx (Pearson 1796), for the only other known fragment of a carnyx tube has a soldered seam (Fischer 1959: 21-2, Taf. 2 and 25.1). This contrasts with the riveted seams of the Llyn Cerrig Bach, Lough-na-Shade, and Torrs horns (C. Fox 1947a: No. 74; Ibid.: Pl. XIIA; Atkinson and Piggott 1955), and with the cast horns of the Late Bronze Age (Coles 1963). Solder was also used in the manufacture of the dome-headed rivets in the Welwyn Garden City burial (Stead 1967: 27-8, Fig. 16). It can only be concluded that the art of soldering had not yet been mastered by the majority of southern British smiths at this time, and/or that they preferred other techniques of joining. Other, non-metallic adhesives were used in joining, but in many cases the adhesive has decayed or been lost, whilst in others it has not yet been properly identified; such adhesives were used for the attachment of some of the ornamental bosses and studs (Nos. 84, 459-61,

465-6). As will be seen below (chapter 29.3.5), enamel was often used to secure glass in its cells in champlevé work.

The most common technique of holding pieces of metal together and onto other objects was riveting. Several different kinds of rivets were used, but whether they were used for securing bronze to bronze or bronze to other materials, they nearly always appear to have been of bronze. Whilst the standard of riveting in repairing old objects was often very coarse, as on the Waterloo Bridge helmet (No. 304), the use of rivets in making and attaching new objects was invariably of a high standard. Broadly speaking, rivets may be divided into two groups, those whose ends were intended to be seen and those that were not. The latter were always of the countersunk type; besides being used to secure essential structural joints, for example, to attach handles to mirror-plates, they were also used to repair cracks that were inadvertently made during manufacture, as on the Witham shield (No. 322). An apparently unique technique of expanding the heads of countersunk rivets occurs on those used to secure the coral studs on the Witham shield; the tops of the rivets were expanded not, as is usual, with a flat-faced punch, but with a finely pointed tool hammered into the centre of the rivet causing a shallow cup and a consequent expansion of the end of the rivet; this technique would have ensured a very tight fit, and may well have been employed in order to cushion the effect of the blow and thus to reduce the danger of damaging the coral studs.

Several kinds of decoratively headed rivets were used, all of them

circular in plan. Ball-headed rivets were used on Nos. 152 and 378, as well as on the decorative strips on No. 304 and from Bredon Hill (T. C. Hencken 1939: Fig. 4.11). Delicately modelled circular heads are found on certain rivets, as on those used to secure the enamelled studs on No. 304 and the studs on Nos. 327A and B. An interesting form of rivet-head is found on Nos. 183A, 189 and 327A; the heads are circular with three tiny bosses arranged in a circle inside a peripheral ridge.

Apart from plain rivets whose heads stood slightly proud of the surface of the surrounding metal, the commonest form of rivet-head (of those that were intended to be seen) was the domed. These were either solid (as on No. 305) or hollow; in the latter case the domes are either (apparently) integral, as on No. 320, or separately made, being attached with adhesives like solder, as on some studs from the richly furnished burial at Welwyn Garden City (Stead 1967: 27-8, Fig. 16), or as washers, as on Nos. 305 and 320. The use of washers is relatively rare. Domed examples have been noted on Nos. 305 and 320; thick solid cast specimens were used in securing the escutcheons' shanks to bowls of 'Rose Ash' type (on Nos. 387, 389-90), whilst flat sheet bronze washers were used on the Trawsfynydd tankard (No. 378).

The rivets themselves were of two kinds: cylindrical, and pointed. The cylindrical were always solid and were always used when the rivet passed right through the pieces joined together, whereas the pointed kind was often made of a piece of sheet metal folded to shape, and was inserted



into, and only rarely passed right through, the backing material.

Most of the joints of metal to metal that were held together by rivets were of the simple lap kind, as on the Santon cauldron (No. 429). Sometimes, however, clamps were used to hold joints together, as on the rims of the Birdlip mirror (No. 335) and the Waterloo Bridge helmet (No. 304). These clamps were often decoratively modelled; a very elaborate form of clamp holds together and masks the join of the rim-piece on the Trawsfynydd tankard (No. 378). The simpler kinds of clamp were often used as repairs over cracks, to prevent the latter from widening, as on certain scabbards (Nos. 252, 271, and 273), or to hold breaks, as on the dexter edging of No. 305. A small group of these clamps was found at Bredon Hill (T. C. Hencken 1939: Fig. 4-2-5 and 10). A rare kind of joint was the rebate which occurs only on the ends of the edging round two of the mirrors (Nos. 340 and 353). It was a rare technique throughout Britain, being elsewhere found only on the elongated staples of some of Piggott's Group IV scabbards (Piggott 1950: Figs. 9.2B, 10.1B).

#### 29.2.5. Repairs

Mention has already been made of some of the techniques used to repair bronzes in the southern British late pre-Roman Iron Age. Both 'hot' and 'cold' processes were used. The former is represented by the 'running-in' of metal - to repair a broken base (No. 389) and casting-flaws (Nos. 98, 120 and 137B). Another method of repairing a casting-flaw was adopted for the handle of No. 351, where a rivet was driven

through the section affected, an arrangement similar to the riveted reparation of the surviving terminal on the Sedgeford torc (Brailsford 1971: 17-8, Pl. VIB), and of a crack in the casing of No. 378.

A unique kind of repair is to be found on No. 321, on which a short length of bronze wire was stretched across the back of a crack, its ends secured after the manner of countersunk rivets in a pair of holes, one on either side of the crack. Additional pieces of metal secured by rivets form the commonest technique of repairing found on the bronzes that are the subject of this thesis. Whilst crudely riveted patches may be observed on No. 428, and a complete new base on No. 429, extensive repair-work included patches and a remodelling of the design on No. 304. Little attempt was made to disguise the repairs on these and other pieces. It appears to be a characteristic of the reparation of old pieces in the late pre-Roman Iron Age that the repair work was of a far lower standard than work first put in on the pieces. Moreover, the repair of damage incurred in manufacture was invariably skilfully effected, as can be seen on No. 322, on which additional plates attached by countersunk rivets were used. Whilst on No. 322 the repairs were made as unobtrusive as possible, the opposite step was taken on roundel C of No. 305, where a crack was prevented from opening up further by an ornamental plate, attached with two rivets, which breaks up the symmetry of the shield's design. A similar ornamental plate, this time attached by a single rivet, was used to repair a break in the edging of No. 305. Similar plates or clamps were

used to repair minor cracks on scabbards (e.g. Nos. 252, 271 and 273 and other objects), and to mask joints, as has been observed above (chapter 29.2.4.).

Another technique of repairing was noted at the end of a previous section (chapter 29.2.1.), that of 'casting-on' with bronze. On the handle of No. 345 this technique was used to hold in position an iron tang that once held a bone replacement for the lower part of the handle.

### 29.3. Techniques of ornamentation

#### 29.3.1. Techniques of incision

A large number of techniques are all incisive, but may be divided into three categories: scribing, engraving, and chasing. Despite the opinion recently voiced by Lowery and Savage (in Lowery, Savage and Wilkins 1971: 177-8), I use the term 'incision' in the strict sense (as implied by the word's etymology) to mean 'cut into', whatever the method of cutting; in their use of the term - to denote engraving - Lowery and Savage ignore the distinction between 'incision' and 'excision', by equating the former with the latter. I also use the epithet 'incised' to describe lines of uncertain technique.

In the setting out of incised ornament, the scriber was generally used, as can be seen on Nos. 308, 335, 340, 342, and 345-6. However, on No. 358 it seems likely, in view of the extreme regularity of all the curved lines, that the ornament was scribed not freehand, as was customary on other objects, but either with a pair of compasses or with jigs. Compasses were probably used to draw the pairs of concentric

circles on the sinister and dexter sides of the pattern on the plate of No. 340. The use of compasses may be detected elsewhere, as in the ornamentation of Nos. 254 and 398, and in the design and ornamentation of No. 475.

The lines drawn out by scribing were afterwards strengthened either by engraving or by chasing. The former technique may be observed on No. 346, the latter on Nos. 335, 340 and 358. Occasionally, however, it was decided not to carry out this 'strengthening', as on the more complete pelta-shaped plaque from the first Tal-y-llyn shield (No. 318).

On Nos. 243-4 a rare technique may be observed: the highlighting of incised lines with spaced facets produced with a centre-punch. Centre-punches were used in several other ways: to create spaced lines of dots (as on No. 84 and on the relief work on No. 305), to produce almost continuous lines (as on Nos. 150 and 162), to rusticate surfaces (on the disc within the terminal loop of the handle on No. 335), to highlight incised lines (as on Nos. 243-4), to create breaks in low relief ridges (as on Nos. 247-9), in the production of dot-and-circle motifs (as on Nos. 211, 321 and 335), to create panels of pointillé ornament (as on Nos. 46, 50 bis, 52, 57-8, 78, 173, 203-4, 234, 305, and 397), and to crimp low, false ridges (as on Nos. 290, 322, 328, 389, 401, and 478A). Other kinds of punches were also used: for example, arc-shaped on No. 335, ring-shaped on Nos. 84, 211, 243, and 321, and dumb-bell-shaped on Nos. 72-4.

Lowery and Savage (in Lowery, Savage and Wilkins 1971) have demonstrated that several kinds of engraving tools were used, often with a rocking motion, in the late pre-Roman Iron Age. 'Common-gravers' were used on Nos. 322 and 346, 'round-nosed gravers' on Nos. 321-2, 346 and 398, and 'scorpers' on Nos. 321 and 377. Both common-gravers and scorpers were also used in the excision of insets for champlevé work.

### 29.3.2. 'False relief' work

On a few objects, for example the closing disc to No. 133 and Nos. 163 and 469, ornament was formed by paring down parts of the surface of the metal to leave the rest of the surface standing in 'false relief'.

This laborious but subtle technique is difficult to distinguish from low relief cast ornament on objects that have been cast; indeed, it is difficult to see how in many cases the two could be distinguished, especially if the latter had been touched up and polished after casting. Although it is a rare technique in Britain, paring down became a common technique in pre-Christian Ireland, being used, as O'Kelly (1961) has shown, both on cast and wrought work. The unfinished state of the ornament on four of the Ipswich torcs (Owles 1969) indicates that this technique was also used on precious metals.

### 29.3.3. Openwork

Piercing of metal was undertaken not only to provide holes for rivets but also in ornamentation. Cold chisels were doubtless used for the openwork on such diverse pieces as the handle-mount of No. 305, the scabbard-frame

of No. 268, the upper pieces of the 'composite discs' from the second Tal-y-llyn shield (No. 319), and various mounts of uncertain function (Nos. 450, 452, 454, 456). However, it is possible that specially-shaped punches might have been used for the small decorative openings on Nos. 322 and 470, whilst a pointed tool was used for the openings in the strainer-plate provided for No. 399.

#### 29.3.4. Repoussé work

A variety of techniques characterise the relief ornament raised up on wrought sheet work in southern Britain during the late pre-Roman Iron Age. The height of the ornament above the surrounding metal surface ranges from less than a millimetre to more than 5 mm. (as on No. 320). Whilst most of this work was effected by hammering punches against the back of the metal when the latter was placed against yielding beds, some of the ornament was raised by hammering the metal into moulds in which the intended design had been formed in intaglio technique. The use of such moulds made ornamentation far easier, and apparently became a popular technique amongst smiths, for examples of relief ornament executed in this way are widely distributed (Nos. 433-5, 437-42, 445-6; MacGregor 1962: no. 100). Moulds for such work have been found in the Santon hoard (Spratling 1970a: Fig. 4, top right, and bottom right) and at Wroxeter (D. Atkinson 1942: 216-8, B230, Pl. LII). It has been suggested (C. Fox 1958: 75) that the relief triskele on 326A was formed by hammering the metal into a metal mould, that had ~~been~~ cast from a wooden pattern.

The standard form of repoussé relief is evenly rounded in profile,

sharpened up at the front by chasing, as on No. 304. There is rarely any trace of punch-facets at the back; however, on No. 321 a blunt tracer was used (Plate 8A). But in addition to these plain ridges, great subtlety of surface-modelling was imparted in many instances by giving an asymmetric profile to the relief. This was effected in several ways; one method, a very distinctive technique, resembles the profile of a crested wave, having a concave face meeting a convex one in a narrow ridge formed by punching with a tracer at the back. This technique was employed to give greater weight to curves, the concave face being on the inside, the convex face on the outside, of the curve. It may be observed on Nos. 305, 313, 320, 322, and on the pairs of coils on the two face-like shield-rib mounts in the 'Stanwick' hoard (MacGregor 1962: nos. 103-4), on a silver plaque in the Pictish hoard from Norrie Law (Anderson 1881: 40, Fig. 27), and on some of the bronze discs with eccentric cups from Ireland, for example, the one in the British Museum (Brailsford 1953: Pl. XXIII.2). Similar 'keeled' effects, giving a markedly angular appearance to relief, appear on Nos. 305, 309, 313, 320, 322 and 448. The angularity, varying from the fairly blunt to the very sharp (the total range may be seen on No. 305), was effected by hammering straight-edged punches into the metal mostly at the back but also at the front. Such work gave the repoussé work a crispness, most clear on No. 305, that has been rarely equalled. Such crispness of relief modelling is occasionally seen in Britain in the solid, as on No. 414, and was doubtless a refinement and continuation of the interest shown in such work by the makers of that small

group of objects modelled in pronounced relief that comprise one facet of Jacobsthal's 'Plastic Style' (Jacobsthal 1944: nos. 70c, 159, 175, 203, 266-75). Most of these works are of cast metal, but a few (Ibid: nos. 70c and 203) were executed in repoussé relief.

Another distinctive keeled technique of relief is the wavy ridge employed on Nos. 320 and 322; whilst the primary work was executed at the back by hammering edge-tools along a sinuous course, it seems likely that additional work would have been needed on the obverse to 'bring out' the waviness to its full extent. It is of interest that the smith who made the full-size replica of No. 322, now housed in the National Museum of Wales at Cardiff, found it necessary to work the obverse as well as the reverse of the roll-moulding in order to give the wavy rib the crispness that is to be seen on No. 322. A similar, but far less pronounced, wavy rib surrounds the boss of No. 321; this was executed differently, merely by punching at the back, this time not along a sinuous course but in zig-zag - alternation with a blunt straight-edged tool - the same tool that was used in raising the floral scroll ornament on the flange. This latter ornament is more softly modelled than on many other pieces; this is partly due to the fact that not all of the outlines were sharpened up at the front by chasing. Similar work occurs on the cap of No. 304. The little bosses in the middle of the hatched panels on No. 304 have each been dimpled; it is of interest, in view of the stylistic link, that dimpled bosses occur on the ring-terminals on some torcs (Brailsford 1971: 16, 18; see also, chapter 7.2.2., above).



An interesting aspect of the repoussé relief on Nos. 285 and 320 is that it has been ornamented with incised designs, what de Navarro (1952: 75) has termed "the ornamentation of ornament".

#### 29.3.5. Non-metallic inlays and studs

Several non-metallic substances were used for inlays and for decorative studs. Whilst vitreous inlays are easy to recognise, other substances are difficult to identify. Nevertheless, coral has been identified on the Witham shield (No. 322), and encrinite on the harness-trapping from the Charlton district (No. 189). In view of the variety of materials that have been identified on pre-Roman Iron Age objects from Yorkshire (Stead 1965a: 63-5), it is clear that close scientific examination is needed of the substances used for ornamental studs on Nos. 183A-B, 229, 268, 271, 327B and 382. All these studs were attached by means of central rivets.

Both enamel and glass were extensively used, although the former is far more common. Since enamel is in fact a kind of glass, I should point out the criteria by which 'glass' is here distinguished from 'enamel'. By 'enamel' I mean opaque vitreous matter that has been heated and fused in situ, whereas by 'glass' I mean opaque or clear matter which has been melted and, after cooling, cut to shape. Recent research at the British Museum Research Laboratory (A. E. Werner and Barker 1969: 1; A. E. Werner and Hughes 1969) has indicated that the red vitreous material referred to here and elsewhere as "red enamel" is not a true enamel; it is in fact, an opaque red glass consisting of minute crystals of opaque red cuprous oxide suspended in a clear lead glass, formed by heating in a

reducing atmosphere until it fused.

Four distinct techniques of enamelling were employed in the ornamentation of the bronzes that are the subject of this thesis. The commonest was champlevé enamelling. The walls of the recesses into which the enamel paste was laid, were never undercut, being either vertical or, more commonly, outward-sloping, with the result that the enamel often seems to have dropped out. The tendency for it to drop out was, however, reduced by roughening the bottoms of the recesses. In most cases the recesses appear to have been excised after casting, as on terrets of Groups VI, VII and VIII. The excision was presumably executed with scorpers and common-gravers except for the circular recesses which were probably drilled out; the bit used for the work was always straight-edged and had a small central guiding-point like a kind of drill-bit still in use today (Maryon 1954: 66, Fig. 59). However, on a few objects (Nos. 85, 87, 90, 91-4, 165-6, 180, 209, 212, 214) the recesses appear to have been excised from the patterns around which the casting-moulds were invested, rather than after casting; on these objects most of the enamel has fallen out, probably due, at least in part, to the smoothness of the recesses.

The other three techniques of enamelling were devised for the production of ornamental bosses. The first is seen on the handle-escutcheons of the Holcombe and Nijmegen mirrors (Nos. 343 and 345) and on a handle from Welwyn (No. 381A). Solid domes of red enamel were separately made and then attached to the bronze with some kind of adhesive. This technique appears to have been a southern British innovation. The next technique is

represented by a group of studs and knobs on Nos. 81-2, 304, 345, and 376. The surfaces of these bronze knobs and studs were coated with red enamel, the metal being grooved to key in the enamel. The technique may be paralleled on the 'Meyrick' helmet (C. Fox 1958: Pl. 62c), and on numerous studs and bosses on the Continent (Henry 1933: Fig. 5). It is clear from the latter that the technique was a Late la Tène innovation and that it was widely diffused (Déchelette 1927: 672, 1057).

The final technique of enamelling is represented by bronze-framed studs on the Battersea shield (No. 305). These studs were formed by placing the open frame in a cup-shaped mould into which the enamel paste was then also placed. The enamel was heated in a reducing atmosphere until it became soft and viscous; the enamel was then moulded into the required shape. As I have indicated in Chapter 25, this technique had a long history on the Continent.

By far the commonest colour used in enamelling was red. Other colours were only very occasionally used; blue occurs on No. 87-8 and 93, yellow on Nos. 93, 95, 203 and 204, and green on No. 94. However, these three colours are never found alone, and were always used in addition to red. The same is true of the small pieces of translucent glass that were also sometimes used. The commonest colour of the glass is dark blue, which occurs on Nos. 68, 70, 107, 118, 208 and 462. Opaque white was also used on No. 208, whilst a variety of colours is to be found on No. 87. The glass was always held in position by using enamel as an adhesive; whilst red enamel was generally used for this, as on Nos. 68, 70, and 208, blue enamel was used on No. 87.

#### 29.4. Technical innovations

The purpose of this section is draw attention to the principal technical innovations in the southern British late pre-Roman Iron Age. Whilst most of these innovations were of continental la Tène or Roman origin, their adoption together with the continued use of old techniques gave smiths the opportunity of taking the craft of bronze-working in Britain to new heights. I do not intend to try to explain here why so many new techniques were adopted at this time, nor why there should have been such an immense growth in industrial production.

The principal structural techniques that were first used in the late pre-Roman Iron Age in southern Britain were lathe-finishing and soldering. The former technique was used on only relatively small objects, such as Group I bowls, and it was not until well into the Roman period that the technique was applied to really large objects, such as cauldrons, and that lathes were used in the forming of vessels. Although soldering was introduced as a technique of joining in the late pre-Roman Iron Age, I have demonstrated (chapter 29.2.4.) that it was rarely used. Plating (chapter 29.2.3.) was also rare, despite its novelty, being first used in covering iron with bronze, and later, in the middle of the first century A. D., in covering bronze with tin. Whilst neither technique was new, sheet bronze work and the use of repoussé ornament was carried out on a scale unprecedented since the Late Bronze Age and the very beginning of the pre-Roman Iron Age, as represented by buckets and cauldrons (Hawkes and Smith 1957). However, one innovation in repoussé technique

did occur in the late pre-Roman Iron Age, namely the introduction of moulds for producing patterns which could be repeated as often as was required and with the minimum of effort (see Chapter 29.3.4.). As I have indicated, new kinds of repoussé work, for example, 'crested wave' relief, were adopted, some of them unparalleled outside the British Isles.

Whilst the only new 'incisive' technique of ornamentation in the British late pre-Roman Iron Age was the crimped rib, the principal additions to the ornamental repertoire were the various techniques of enamelling; as I have indicated (Chapter 29.3.5.), all but one of the techniques of enamelling may be paralleled in contemporary or earlier contexts on the Continent. From this time until well after the end of the Roman period, the principal centres of enamelling in Europe were located in the British Isles.

## 30. Chronology

### 30.1. Introduction

The purpose of this chapter is twofold: to outline the chronological framework of the continental la Tène Iron Age, and to evaluate the kind of precision that we can expect to achieve in attempting to date the metal objects that are the subject of this thesis. The length of the former section is due to the misconceptions about continental chronology that have abounded in previous studies of British late pre-Roman Iron Age metalwork. Since British chronology must still be based primarily on that of the Continent, it is important to be clear in our minds how much precision the latter can afford. First, however, a brief review is needed of the procedures essential to chronological study in the absence of natural scientific techniques.

Two procedures are essential to the arrangement of archaeological data in temporal order: stratigraphy and typology. It is unfortunate that the potentially more useful and more reliable method, stratigraphy, is still in its infancy in its application to both British and continental la Tène chronology. This is due to the rarity of sites with deeply stratified deposits, to the absence of programmes of investigation of such sites as do have deep deposits, to the difficulty in deciding how much weight to place on excavators' interpretations of the succession of structures and deposits, and partly to the atrocious standard of excavation reports as sources of detailed information about the work that they purport to describe. Few reports match the standard of that on the

Colchester Excavation Committee's excavations on the Sheepen Farm site (Hawkes and Hull 1947); in it the stratigraphic evidence was presented in a straightforward manner, and it is easy to discover from the text what was found where, and on what grounds chronological and other inferences were made. The converse is true of the report on the excavations at Maiden Castle (Wheeler 1943), as Grimes (1945) has pointed out. Two points are particularly germane to the present discussion and concern most of the excavations that have been and are being carried out. The first is the unwillingness of most excavators of settlements to record accurately the positions of portable artifacts in the deposits in which they occur; the second is the subjectivity of perception, of observing and interpreting the mutual relationships of archaeological features and the relationship of portable artifacts to those features. These two considerations are of cardinal importance in assessing the value of such statements as "associated with" and "from the same layer as". A further consideration increases the difficulty of accepting the statements of excavators at face value, namely the lack of interest in explaining how archaeological deposits came to be formed. It is not easy to know how much weight one can place on the stratigraphical comments of an excavator who is unaware of the dynamics of natural deposits, of the ways in which deposits were formed and what goes on within them after their formation. Despite the detailed comments of such writers as R. J. C. Atkinson (1957), these matters are still apparently rarely taken into consideration. For example, what is meant by the term "occupation layer" when applied to

a deposit on the floor of a structure, that contains the decayed remains of the kind of detritus that is accumulated in everyday life? How were such deposits formed, and what relationship do they have with the use of the structures to which they are stratigraphically related? Is it correct to assume, as most excavators normally do, that the occupants of the structure lived in abject squalor, with the rubbish of everyday life accumulating around their feet? Or did the "occupation layer" accumulate after the structure had gone out of use as a place to live, that is, during and after the collapse of that structure?

In other words, the question that must be asked is to what extent can an assemblage in a deposit on the site of a settlement be considered of value in making chronological judgements? I have elaborated upon this at some length, since it is far more crucial for the dating of the bronzes that are my present concern than for that of other kinds of artifacts of the later phases of the pre-Roman Iron Age of southern Britain. The reason is simple, namely the extreme rarity of this metalwork in comparison, for example, with pottery. The chances of establishing the significance of associations of the metalwork with other objects are far less than for pottery, for the total number of associations is considerably less. Thus the opportunity for measuring the length of time in which such and such a form was made and used is correspondingly less than for pottery.

In the absence of stratigraphic information, it is generally agreed that one must resort to typology to build relative sequences for archaeological



data. I should emphasise, at this stage, that throughout this thesis I use the word typology in the temporal sense to mean the arrangement of types in chronological series. However, it seems to me that this procedure is of spurious worth, and that it is based on a doubtful model of changes in artifact-design. The assumptions underlying this model are that change is gradual and regular (Atkinson 1960: 15-20), and that a prime cause of variation in design is difference in date of manufacture. It seems to me that one of the things that archaeologists should be trying to find out, namely what is the significance of variation in artifact-design, is assumed at the outset in adopting the typological method. Let us instance three related types, A, B, and C; A is more similar to B than it is to C, and C is more similar to B than it is to A. In terms of typology, this relationship would be interpreted as a sequence, from A to B to C, or from C to B to A; the direction of the sequence would be gained from contextual evidence. Let us assume that contextual evidence indicates that A is earlier than C, but that there is no evidence for the date of B. I would submit that to place B intermediate between A and C is not the only possible explanation, and that, in fact, B is as likely to have been later as earlier than C. It could be that initially within a cultural system one craftsman made objects according to design A, that later on another started to make radically different objects according to design C, and that later still a third craftsman adopted features of the design of both types in making objects according to design B. Where several types are represented, the situation is likely to be far more complex than this, for

the number of possible permutations will increase factorially. I would submit that only external evidence can ever satisfactorily disentangle such a situation; the typological model is always likely to present a gross over-simplification of the actual situation. Wherever I have used typological arguments, I have done so with the greatest of reluctance; I hesitate to place any reliance on them whatsoever, and to use them for other purposes. If we are unable to check typological sequences in detail, then it seems to me that they are of extremely doubtful value.

Whatever the context of an object, it must always be open to doubt as to whether the object was made at the same date as the others with which it is found. Sometimes lack or presence of wear will indicate whether the object is new or old, but this is generally of little help.

There is little doubt that the best sources of chronological information will come from burials and hoards, for one can be sure that the objects were actually in use at the same time. On settlements the situation is rarely as simple, for one can rarely be sure whether an isolated object in any layer was deposited or was lost at the same time as the other objects therein.

## 30.2. Continental la Tène chronology

### 30.2.1. Introduction

In the absence of a detailed framework built up with the aid of natural scientific techniques, the absolute dating of the la Tène Iron Age depends still on links with the civilizations of the Mediterranean, where archaeological data can be tied in with historically documented events.

These links are most frequent at the beginning and end of the period, but for most of it the links are few, with the result that a considerable amount of controversy has raged, and rages still, on certain issues.

The difficulties inherent in cross-dating la Tène material culture with that of the Mediterranean lands have been considered often.

Hodson (1964a: 133-4) has distinguished three kinds of chronological links: 1 - Mediterranean (i. e. Etruscan, Greek and Roman) imports in la Tène contexts; 2 - la Tène objects with pronounced Classical influence in their designs; 3 - la Tène objects in Classical contexts. A fourth category, not formally distinguished by Hodson, may be added: the correlation of la Tène material culture with events concerning Celts (and, often, Mediterranean peoples) documented in Classical literature.

Hodson argued that the first two kinds of cross-dating provide termini post quos for la Tène objects, and the third, termini ante. However, only the second kind can be really considered to give termini post quos for the manufacture of la Tène objects. The presence, for example, of an Attic cup in a la Tène A Fürstengrab provides a terminus post quem only for the date of burial. In the final analysis, the Attic cup cannot be used to date the manufacture of the la Tène artifacts associated with it, since the latter may have been made long before the Attic cup was made and imported. The cup, therefore, provides no more than a terminus a quo for the date of manufacture of the la Tène artifacts buried with it. A similar situation obtains with the third kind of cross-dating, for any la Tène type, of which a specimen has been

found in a Classical context, may have been made and used long before and/or after that specimen had appeared in its Classical context. In short,

"A date calculated for any one la Tène object will apply to it, but not to the type as a whole... most types have a fairly long life... Any object dated could be at the beginning or at the end of this 'life' unless there is comprehensive supporting evidence to show which... This warning applies not only to la Tène objects but to the Classical date-givers as well" (Hodson 1964a: 133).

In general, there is a marked absence of such "comprehensive supporting evidence". Thus, much of the framework built up by means of these cross-datings must be regarded only as very tentative.

Extensive use has been made of the fourth kind of cross-dating. It forms, for example, the basis of earlier la Tène chronology in north-central Italy and elsewhere, as well as that of later la Tène dating in areas as widely separated as the southern Alps, the lower Danube, Brittany, and Scotland. Frequently, the conquest of an area by Rome is used as a terminus ante quem for la Tène monuments and portable artifacts in that area. Such arguments are based on the assumption that profound changes in the possession of political power would have been reflected by equally profound changes in material culture. It is, however, doubtful whether such a model is universally valid, a view shared by ethnographers (Nicklin 1971; Rowlands 1971: 220-1). A further danger in attempting the fourth kind of cross-dating is to seek the causes of archaeological events and features and of changes in material culture in known historical events in periods that are historically very poorly documented, and in which it is very difficult to date archaeological data with precision. Archaeologists and numismatists have been particularly

prone to succumb to this tendency in their attempts to identify a Caesarian horizon in the material culture of Gaul. Furthermore, in common with historians, archaeologists must be wary of taking ancient documents at face value, especially when the events that they chronicle are only recorded in one source and cannot therefore be checked. For example, the statements of Roman historians concerning the glories and prowess of their kinsmen's armies may well have been considerably exaggerated. If such statements were examined critically and the exaggeration sifted out, many previously accepted interpretations of archaeological data might be radically altered.

### 30.2.2. Early and Middle la Tène absolute chronology

The earliest series of dates for the material culture of the la Tène Iron Age is provided by the presence of imported Attic cups in such richly furnished burials as Klein-Aspergle, Schwarzenbach and Somme-Bionne (Dehn and Frey 1962: 204). Whilst the dating of this pottery to the latter part of the fifth century B.C. is reasonably secure, the chronology of imported Etruscan bronzes recovered from these and other Early la Tène Fürstengräber is far less precise (Ibid. : 203-4). Dehn and Frey (1962: 205) have also indicated that the chronological correlation of these Fürstengräber with the less spectacularly furnished Early la Tène burials of eastern France, southern Germany, central Switzerland, and other areas can only be very approximate. Thereafter, the situation is more complex, for of the few potential cross-datings with the material culture of the Mediterranean not all are as

precise as is often claimed.

The la Tène B double-burial from Waldalgesheim is generally assigned to the late fourth century B. C. on account of the imported bronze Italic bell-situla found in it (Jacobsthal 1944: 141, no. 156). However, it is clear from a recent study (Riis 1960: 18-26) that the chronology of these bell-situlae is not easy to define with precision; indeed, it is sufficiently insecure for Riis (1960: 21) to have dated the Waldalgesheim specimen by reference to the la Tène B objects found with it. Nevertheless, Dehn and Frey (1962: 205), following Jacobsthal (1944: 144-5), have argued that a date in the late fourth century is confirmed by the presence in north-central Italy of la Tène objects, ornamented in "voll ausgebildet" Waldalgesheim style, which are considered to have been the property of the Senones, a Celtic tribe conquered by the Romans in 283-2 B. C. (Polybius, Hist., II.19). Jope (1971b: 175) has suggested that the maker of the gold buffer-torc from the Sennonian cemetery at Filottrano near Ancona (Jacobsthal 1944: no. 44) was a follower of the Waldalgesheim Master. Thus the dating of the Waldalgesheim finds to the late fourth century B. C. can only be sustained on the grounds that they are earlier than the Filottrano torc and that the latter must be earlier than the Sennonian débâcle of 283-2 B. C..

A further find may be of value in providing a datum-point for la Tène B types. In 1953 a group of Hellenistic pottery and a pair of central European cast bronze Hohlbuckelringe were recovered from an

ancient well on the Corinth isthmus in Greece (Krämer 1961a). It is probable, but not altogether certain (Ibid.: 33), that the pottery is of late fourth century B.C. date. It is attractive to suggest that the deposition of the Hohlbuckelringe took place at the time of the Celtic incursions into Greece in 281-79 B.C., but, in the words of Krämer (1961a: 38):

"Natürlich waren auch andere, historisch nicht bezeugte Anlässe vor und nach dem Kelteneinfall für die Deponierung des keltischen Frauenschmucks in Isthmia denkbar."

The Celtic incursions into south-eastern Europe at this time have also been used as a peg onto which to hang the dating of certain aspects of Jacobsthal's 'Plastic Style'. Jacobsthal (1944: 97-103) distinguished several aspects of this kind of ornament, characterised respectively by gold neckrings, massive cast bronze bracelets and other objects, in particular vehicle-fittings. Jacobsthal's dating was based on the premise that the style was the 'plastic expression' of a 'tendency to swell' noted in its supposed predecessor, the 'Waldalgesheim Style' (Ibid.: 97). Whether this model of the development of the style is altogether tenable is not a point that I wish to consider here. It is clear that Jacobsthal envisaged the Plastic Style as having come into its own by the third century B.C.. Two finds were crucial in his argument: a gold torc from Frasnes-lez-Buissenal, Belgium (Jacobsthal 1944: no. 70), and a set of vehicle-fittings from Mezek, Bulgaria (Ibid.: nos. 164 and 176). The argument was built up in the following way. Firstly, it was stated (Ibid.: 99):

"The gold torc forms part of a gold hoard: the Celtic gold coins in it, as Dr. Pink kindly informs me, point to the second quarter of the first century B.C., but this is no objection to dating other parts of the hoard earlier, and I should like to place the torc in the third or second century B.C., conscious, however, that this is guess-work" (my italics).

Later on, he commented (Ibid.: 135) that the Frasnes-lez-Buissenal

torcs "were works of the third or second century B.C.". Thus,

guess-work had already become established fact. On this basis, he

went on to argue (Ibid.: 151-2) of the Mezek finds that

"the historical conditions of a Celtic chariot grave in Thrace well agree with the assumed third-century date of the Plastic Style".

However, whilst that statement may be true in itself, it does not prove

the issue, for it has been assumed that only the historically documented

occurrence of Celts in this part of the world could account for the

Mezek finds, and that the Mezek finds are in fact of the third century

B.C.. The argument is circular. In view of the fact that the only

other tubular torcs with certain contexts also have probable first century

B.C. associations (R.R. Clarke 1954: 36-46; Joffroy 1969), it would

seem more reasonable to assign the Frasnes-lez-Buissenal torcs to the

first rather than any earlier century B.C..

However, Jacobsthal (1944: 207) later drew attention to the presence

of bracelets ornamented in heavy relief of the 'Plastic' kind from Tombs

75, 149 and 158 in the cemetery at M<sup>II</sup>nsingen-Rain (Hodson 1968: Pls

33.569, 64.405-6, and 71.075, respectively). Hodson (1968: 19) has

assigned these tombs to his Horizons P, Q, and O, respectively. These

horizons have a rough equivalence to parts of la Tène Ic (Viollier) / B

(Reinecke). But the precise chronological significance of this beyond the



Münsingen-Rain cemetery is not clear, for it cannot be assumed that the life of the 'Plastic' style elsewhere was totally co-aeval with its appearance at Münsingen-Rain. For example, 'Plastic' ornament also occurs on the large knobs on the feet of certain central European brooches of Early and Middle la Tène construction (e.g. Jacobsthal 1944: no. 347; Filip 1956: Obr. 29). Filip (1956: 525) has assigned these brooches to the second of his flat-grave horizons of the Czechoslovak la Tène Iron Age, but, as Hodson (1964a: 126) has pointed out, the chronological significance of this sequence of horizons is unclear. It may, however, be noted that the final la Tène flat-graves in the whole of Czechoslovakia are now considered to be equivalent to Horizon U at Münsingen-Rain (Čižmář 1970: 571-2). Since the known contexts of 'Plastic' style pieces from Czechoslovakia are in burials, and since none is known to have been found on the oppida, of which the earliest are equivalent in date to Horizon V at Münsingen-Rain (Ibid.: 569-71, 572), it seems reasonable to argue that, in terms of the Münsingen-Rain sequence, the central European 'Plastic Style' came to a close at the latest early in Middle la Tène.

Two finds indicate how late ornament in the Waldalgesheim mode continued to be produced on the Continent: a pair of brooches from Conflans, arr. Epernay, dép. Marne (Le Clert 1898: 78, PLXXII. nos. 232-3; Jacobsthal 1944: 207), and the scabbard from Cernon-sur-Coole, dép. Marne (Jacobsthal 1944: 96, 177, no. 113). Both finds are of Middle la Tène date. One of the Conflans brooches (Le Clert 1898: no. 232) is

identical in form to Hodson's type 65 at Münsingen-Rain, which is found in tombs that are assigned by Hodson (1968: Pl. 123) to his Horizon U, in other words, early in Middle la Tène. The Cernon-sur-Coole scabbard is of Middle la Tène type, and was found in a burial with other Middle la Tène pieces (Birchall 1965: 272-3, 314, Fig. 28. no. 234).

The chronology of the 'Hungarian Sword Style' is as difficult as that of the Plastic Style. De Navarro (1966: 150) follows Vinski-Gasparini (1959: 295-6) in arguing that it was current "at an advanced stage of the Middle la Tène period". Vinski-Gasparini's argument was based on the correlation of the Yugoslav scabbards with 'Hungarian Sword Style' ornament with Filip's horizon of iron punched sword-chains (Filip 1956: 533-4). However, the demonstration by Čizmar (1970: 571-2) that the latest graves in Czechoslovakia correspond to the earlier part of the Swiss Middle la Tène, and the fact that iron punched sword-chains have only been found in graves, indicate that Vinski-Gasparini's dating must now be revised. A warrior burial from Iwanowice, distr. Miechów, Poland (Filip 1956: Obr. 38; Hensel and Jażdżewski 1963: Pl. 51), indicates that such chains were current at a time equivalent to Horizon U at Münsingen-Rain, for amongst the grave-goods were a brooch of Hodson's type 65 (Hodson 1968: Pl. 123), an iron punched sword-chain, as well as a spear whose socket is ornamented in 'Hungarian Sword Style'. Nevertheless, it is clear that in Yugoslavia, at least, this style is still evident at a date equivalent to central European la Tène D, for a warrior-burial of this date from Zemun-Gardoš (Vinski-Gasparini 1959: 295)

contained a sword-scabbard so ornamented. Precisely when this style came into existence is still not clear, as de Navarro (1966: 150) has pointed out. Jacobsthal (1944: 95-6) argued that the style was developed from Waldalgesheim ornament and that it presupposed its existence. However, comparison of the Boelcske scabbard's ornament (Jacobsthal 1944: no. 116) with such Hellenistic floral scroll work as is seen on the Hoby jug (Johansen 1923: Fig. 26) suggests rather that a renewal of Hellenising influence may have been the prime source of the layouts and details of 'Hungarian Sword Style'.

The depiction of a helmet of 'Batina' type and of shields with 'hump-backed' (bandförmig) boss-covers on the balustrade of the shrine dedicated to Athena Polias Nikephoros at Pergamon in the region of Eumenes II (197-159 B. C.) (Powell 1958: Pls 48-9) is generally used as a terminus ante quem for the inception of 'Middle la Tène' culture. This shrine was a reconstruction of one erected in the reign of Eumenes II's father, Attalos I, in the years 226-3 B. C., and raised by Philip V of Macedonia in 201 (Kähler 1948: 132-3). Whilst it is uncertain precisely by what date the rebuilding of the shrine had been completed, it is likely that the la Tène weapons and equipment depicted on the balustrade were captured in 189 B. C., when Cn. Manlius Vulso and Eumenes II defeated the Celts of Asia Minor and won an enormous quantity of booty (Hansen 1947: 84-9; Kähler 1948: 138-9; de Navarro 1960: 115). It is also possible that the weapons depicted were those gained early in Attalos I's reign; it is uncertain whether Attalos I defeated the Celts in one or two major

battles outside the walls of Pergamon, or precisely when the battle(s) took place (Kähler 1948: 181, n. 11).

The depiction of these la Tène weapon-types on the balustrade of the shrine indicates that they were being made and used in Asia Minor at the latest by the beginning of the second century B.C.. In transferring this datum-point to Central Europe, it is assumed not only that the Celts of Asia Minor were in direct contact with their European kinsmen, but also that specific developments in weapon-design occurred more or less simultaneously in both areas sometime before 189 B.C. and were 'diffused' from one area to the other. On the other hand, it is possible that 'Batina' helmets and bandformig shield-boss mounts were being made before the Celts who later settled in Asia Minor had left central Europe at the beginning of the third century B.C.. Whichever hypothesis is preferred, it can be affirmed that both forms of weapon were in use by the beginning of the second century B.C.; nevertheless, we have to refrain from assuming that any particular central European specimen of these types was necessarily made at so early a date. For any particular specimen under consideration this date of 189 B.C. is, strictly speaking, only a terminus a quo.

It has also been argued that the warrior-burial at Ceretolo (Klindt-Jensen 1953: Fig. 21, Pl. X) provides a terminus ante quem for the beginning of the 'Middle la Tène' period. The argument is based on the Hellenistic bronze jug found in the burial, and on the fact that the burial lies in that part of the territory of the Boii, to the south of the Po, that

submitted to the rule of Rome around 192 B. C. (Klindt-Jensen 1953: 77-8; Jope, in Dudley and Jope 1965: 23, n. 14). However, the bronze jug cannot be as closely dated as was once thought (de Navarro 1960: 83, no. 8; Hodson 1964a: 133). Moreover, it is doubtful whether it can be assumed that weapons were not interred in burials by Celts after they had submitted to the rule of Rome. The possibility that the weapons placed in the Ceretolo burial had been procured from the area to the north of the Po after 192 B. C. cannot be excluded. It must not be overlooked that weapons were placed in burials in 'pacified' areas away from military installations in Roman times (cf. Schönberger 1953), and that, furthermore, Late la Tène weapons were placed in at least one burial in Provence, long after its submission to Roman rule in 123-1 B. C. (R. R. Clarke and Hawkes 1955: 224, no. 33). On its own, it is doubtful whether the Ceretolo burial would carry much chronological weight. However, when the Pergamene evidence is taken into consideration, a pre-192 B. C. date for the burial is by no means inconceivable.

### 30.2.3. Late la Tène chronology

In recent years a great deal of attention has been focussed upon the dating of Late la Tène material culture, particularly upon the time(s) at which the various types that characterise it, for example the 'Nauheim' brooch, were first made. (It should be noted that I use the term 'Late la Tène' to describe that body of material culture which is associated with la Tène III/D metal types.) Whilst it is generally accepted that much of Late la Tène belongs to the second half of the first century B. C., the majority

of controversy centres on whether or not such types were in existence in the first half. At present, the interpretation of finds from some of the oppida and from the Ticinese cemeteries of southern Switzerland and northern Italy seems crucial to this problem. Also of importance is the dating of Gallo-Belgic coinage.

The evidence from the Helvetic oppidum on the Engehalbinsel at Bern has been set out on more than one occasion by Müller-Beck (1961; in Müller-Beck and Ettliger 1964a: 43-50; and in Müller-Beck and Ettliger 1964b: 120-37). Within the body of, and under, the Inneres Südwall of the oppidum have been discovered Nauheim brooches. Müller-Beck (1961: 406-9; in Müller-Beck and Ettliger 1964a: 47-50; and in Müller-Beck and Ettliger 1964b: 120-36) has argued cogently that the erection of this rampart is likely to have occurred during the period 58-2 B. C., after the return of the Helvetii from Bibracte and before the final defeat of the transalpine Gauls by Caesar at Alesia. The archaeological terminus ante quem for the rampart is as late as the mid-first to mid-second century A. D., being provided by material connected with the construction of the amphitheatre of the Roman vicus. However, it is clear that, archaeologically, it appears that the site was continuously occupied through Late la Tène times into the Roman period; Ettliger (in Müller-Beck and Ettliger 1964b: 145-8) has brought together the evidence for occupation in the second half of the first century B. C.. Whether or not Müller-Beck's thesis can be accepted depends essentially on whether a post-Caesarian date for the construction of the Inneres Südwall

can be ruled out. It seems to me that, in the final analysis, it cannot, and that his arguments can be neither refuted nor accepted unconditionally; there is no archaeological evidence that is chronologically sufficiently precise to resolve the issue one way or the other.

Whereas a cautious attitude has been taken by most German writers on the question of the beginnings of Nauheim brooches, in France it is generally accepted that they had come into fashion before the arrival of Caesar in transalpine Gaul (Gourvest 1957; Chapotat 1970: 62-3). At only one site, however, is there evidence which is strongly suggestive of such a conclusion. At the oppidum of Mediolanum at Châteaumeillant, dép. Cher, a Nauheim brooch has been discovered under a rampart of murus gallicus type. Hugoniot and Gourvest (1961: 198-200) argue that this rampart was constructed not later than the period of Caesar's Gaulish campaigns. However, as is the case with the Engehalbinsel, this date can only be sustained if it is assumed that no defences were erected around large native settlements in Gaul after the time of Caesar's campaigns. I know of no way at present of validating such an assumption.

Two other finds may possibly provide evidence for an early date for the origins of Nauheim brooches. Frey (1970: 215) has recently drawn attention to the presence of such a brooch in a hoard of miniature 'votive' bronzes, discovered in 1892 at Telamon, prov. Grosseto, Italy (Montelius 1904-10: 920-1, Pl. 205). The hoard was found on a hill near a shrine (built to commemorate the Roman victory over the Celts at

Telamon in 225 B. C.) which was almost certainly destroyed by Sulla in 82 B. C. (von Vacano 1967: 86-7); recent excavations have failed to yield any evidence for occupation on the hill after this date (von Vacano 1961: 38-41; 1967: 86-7; Frey 1970: 215, n. 17). How significant this is for the dating of the hoard is, however, an open question. A further Nauheim brooch has been discovered in the excavations on the site of the oppidum at Entremont (Benoit 1968: Fig. 23); no precise contextual evidence has been given for this find. It is generally accepted that the oppidum was abandoned following the submission of the Salii, in whose territory it lay, to Roman rule in 125-3 B. C. (Ibid.: 4-8); there is no evidence that the site was occupied in Roman times (Ibid.: 3).

It is unfortunate that the potentially most useful site for mid-first century B. C. chronology, the site of Vercingetorix's defeat by Caesar in 52 B. C., Alesia, has not been scientifically excavated. Moberg (1951: 111-8) and Hachmann (1961: 249-50) have indicated how difficult it is to use the finds from Napoleon III's excavations in chronological argument. It has often been claimed that no Nauheim brooches were found in these excavations; Gourvest (1957: 12), Müller-Beck (in Müller-Beck and Ettliger 1964a: 48), and Chapotat (1970: 62) have argued that this can be explained in terms of J. Werner's conclusion (1955: 171) that since such brooches have only been found in the graves of women they were worn only by women, and that, therefore, it would not be surprising if such brooches were absent from the site of a battle. However,



Menke (1968: 66) has indicated that it is incorrect to state that Nauheim brooches do not occur in the graves of men. Moreover, Hachmann (1961: 252) has noted that Alesia has in fact yielded a brooch of this type (Schaeffer 1930: Fig. 170.B). Moberg (1951: 116, n. 80) has observed that, since a considerable amount of pottery was recovered in Napoleon III's excavations besides weapons, coins and brooches, the normal interpretation that his discoveries related directly to the battle may not be correct; nevertheless, since Hachmann (1961: 250) has indicated that the finds from these excavations are "hoffnungslos verwirrt", Moberg's doubts may be unjustified. It may be noted, however, that the weapons recovered in those excavations include Late la Tène swords and sword-scabbards (cf. Moberg 1951: Figs. 12-3); it seems reasonable to argue that they are unlikely to have been discarded at the site after 52 B.C.. Despite the doubts that have been raised by archaeologists concerning the chronological value of the finds from Alesia, students of both Gallo-Belgic and Roman Republican coinage use the date of 52 B.C. as a firm datum-point for the coins found in Napoleon III's excavations (Colbert de Beaulieu 1955: 262-4; M.H. Crawford 1969a: 146, no. 565; D.F. Allen 1971: 26).

It has long been recognised that the cemeteries of the Ticino (Tessin) Valley, such as Giubiasco (Ulrich 1914) and Ornavasso (Bianchetti 1895), are of profound importance for Late la Tène chronology. The graves in these cemeteries contain admixtures of la Tène

and Roman artifacts, and are therefore potentially of great chronological value. However, the published data on the Giubiasco cemetery are unsatisfactory, for Crivelli (1958) has indicated that the integrity of many of the published find-lists of individual graves cannot be vouchsafed. Until Crivelli's long-awaited re-analysis of the Giubiasco finds is published, judgement on their chronological value must be suspended.

The dating of the two Ornavasso cemeteries, San Bernardo and Persona, has been analysed in great detail by Moberg (1951: 88-111; 1953: 13-20), but his conclusions and procedure have been refuted by Hachmann (1961: 247-9) for three principal reasons; it may, however, be noted that one of Hachmann's points has been rejected by Krämer (1971: 120, n. 40). Hachmann argued first that it cannot be assumed that the coin-identifications published by Bianchetti were altogether correct; however, Moberg himself (1953: 19, n. 54) later noted that, although a new study of the coins was certainly needed, the "final impression was that the risk... that a better identification of the coins listed without details by BIANCHETTI might alter the picture, is probably not a great one".

Hachmann's second point was that Grueber's dating of Roman Republican coinage, on which Moberg's analysis was based, was out-of-date; the third point was that Moberg had allegedly made little distinction between the dates of issue and periods of circulation of Roman Republican coinage, despite the fact Moberg (1951: 93-100) had considered that at some length. Whilst admitting that even very early Republican issues are found with Imperial ones, Moberg deemed it significant that of the

identifiable coins no Imperial issues had been recorded in the San Bernardo cemetery, and that the small group of burials at Persona containing only Republican issues was located at the centre of the cemetery. Using Grueber's chronology, Moberg (1951: 96-105) analysed the San Bernardo coin-dated graves, and came to the conclusion that, since horizontal stratification was apparent, the date of each grave was likely to have been not long after the terminus post quem provided by the latest dated coin included in it. However, when the termini post quos of the coin-dated graves are replotted according to the latest available chronological analysis of Roman Republican coinage (M.H. Crawford 1969a) (Fig. 25 ; see also Appendix III), it is clear that Moberg's horizontal stratigraphy is no longer tenable; Fig. 21 also indicates that no other horizontal stratification can be detected in the San Bernardo cemetery on the basis of the coins. Furthermore, it may now be stated that the clustering of graves containing only Republican coins in the centre of the Persona cemetery has no chronological significance, for one of these graves (No. 57) contained a two-handled cup of a kind that is firmly dated to Augustan and later times (Klumbach 1966). In view of the fact that the Late la Tène brooch-forms and Italian bronze wine-services found in the San Bernardo cemetery are elsewhere in the southern Alpine area found only in Augustan and later contexts (Hachmann 1961: 248-9), it is clear that Moberg's conclusion that the majority of the San Bernardo graves date to the late second and early first centuries B.C. cannot be sustained.

Recent, but still unpublished research by Bertolone, Crivelli and Pattaroni on the Giubiasco, Gravellona Toce cemeteries (cited by Birchall 1965: 289) apparently demonstrates that the Late la Tène artifacts and Italian wine-services of Aylesford-Kelheim type (J. Werner 1954) are all later than c. 50 B.C..

Further light on the dating of Late la Tène material culture is shed by Gallo-Belgic coinage. This coinage is not easy to date, but the generally accepted chronology has been built up on a series of assumptions of which some appear to be of dubious value. Colbert de Beaulieu (1955) has documented the four principal assumptions: the first is that the coins recovered in Napoleon III's excavations of 1862-5 at Alesia can be considered to represent a closed deposit datable to 52 B.C.; the second, that in Gaul gold coinage ceased to be struck after the time of Caesar's campaigns; the third is that in Gaul hoards of coins containing exclusively 'local' issues were deposited before Caesar's arrival, and that hoards with 'mixed' contents, that is, containing coins far from their place of origin, were due to the extensive movements of people and to the alliances formed during the time of Caesar's campaigns; whilst the fourth is that there is a steady deterioration through time in the quality of the gold used in Gaulish coinage. Just how far these assumptions are valid is uncertain, but it is striking that while the finds from the Napoleonic investigations at Alesia are considered of little chronological value by archaeologists, the opposite view is taken by numismatists. It is also relevant to consider whether it is reasonable

for numismatists to seek for the primary causes of deposition of hoards in historically recorded events (cf. D.F. Allen 1971: 26-7, 30-1).

Whereas it is probable that hoards of coins and other valuables were hidden in times of economic or social insecurity (cf. M.H. Crawford 1969b), there must have been a host of personal reasons for owners to consign valuables to the ground at times other than those recorded in historical documents.

However, there is one point that has not hitherto been raised in considering the dates of the coins, namely the depiction on coins with the legend CRICIRV, attributed to the Sussions, Allen's Group XF (D.F. Allen 1961: 173), and normally considered to be of pre-Caesarian date (Colbert de Beaulieu 1955: 263-4; D.F. Allen 1971: 26), of a brooch of typologically advanced la Tène III form. The majority of these coins, represented in gold, silver, and bronze, has been found in the Sussionian oppidum at Pommiers (Vauvillé 1907). The brooch depicted on these coins is always seen in profile and is clearly, as Maxe-Werly (1884: 404) pointed out, an accurate representation of a type that, in default of any other name, I shall term the 'Pommiers' type after a specimen found at the eponymous site (Vauvillé 1907: 14-6, Fig. 5.12; Déchelette 1927: Fig. 403.4). The 'Pommiers' brooch is closely related to the 'thistle' type; indeed a strong case could be made out for regarding it as the latter's prototype. Thistle brooches are generally dated to the first half of the first century A.D. (Hawkes and Hull 1947: 314-6, Type X). The 'Pommiers' type is in fact Hawkes'

and Hull's Type VIII (1947: 313); the earliest known contexts for the type appear to be Augustan, as at Goeblingen-Nospelt (Thill 1967: 94, A35-6, Taf. II.2).

The CRICIRV coins pose a problem that is not easy to resolve. Two alternatives are possible: either the currently accepted model of dating all gold coinage in Gaul to Caesarian and pre-Caesarian times is incorrect, and the CRICIRV coins were issued in the second half of the first century B.C., or the 'Pommiers' kind of brooch was already being made when Caesar arrived in Gaul. If the latter solution is accepted, it means that 'Pommiers' brooches were contemporary with or even earlier than the earliest Nauheim brooches; it would also entail radical modification of the currently accepted model of Late la Tène brooch typology. However, in view of the paucity of chronological evidence on which the numismatic model is based, and of the fact that gold coins do occur in some post-Caesarian hoards (D.F. Allen 1971: 27, n. 3), it seems to me that one cannot exclude the possibility that gold coins continued to be struck and circulated in Gaul in the second half of the first century B.C.. There is no intrinsic reason why this should not have been so, for post-Caesarian issues of both silver and bronze coinage are known (Colbert de Beaulieu 1955: 264; D.F. Allen 1968: 51; 1971: 26-9). The uncertainty about the dating of these CRICIRV coins means that such datum-points as 56-1 B.C. for the Le Catillon hoard (D.F. Allen 1961: 297-301) cannot be accepted with confidence. It may be noted, moreover, that one of the three deposits at Le Catillon contained

three la Tène III brooches (Colbert de Beaulieu 1957: Fig. 2; Krämer 1971: Abb. 4.3-5), all of them variants of Almgren's type 65 (Almgren 1923: Taf. 4.65); nowhere else are such brooches known to be earlier than Augustan times (Fischer 1966: 296, 307-8, Abb. 2.1, 3.1, 3, and 4, 4.11; Menke 1968: 68, 70; Krämer 1971: 120, n. 41). In view of this, it seems reasonable to conclude that the Le Catillon hoard was deposited in the last few decades of the first century B.C.. This is by no means improbable, as Krämer (1971: 128) has noted, since two other hoards of Armorican coins from Jersey cannot have been deposited earlier than 39 and 32 B.C. respectively, on account of the Roman coins included in them (Colbert de Beaulieu 1958: 202-3).

### 30.3. The chronology of southern British bronzes of the late pre-Roman Iron Age

#### 30.3.1. Introduction

Until the second half of the first century B.C. there appear to have been few direct contacts between pre-Roman Iron Age Britain and the Classical world. Apart from a few Dressel IA amphorae from Hengistbury Head and its hinterland (Peacock 1971: 173, 180-2), there is very little evidence of contact earlier than the middle of the first century B.C.. This makes the construction of both relative and absolute chronologies more difficult than on the Continent. In the absence of a number of firm detailed sequences, built up from stratified deposits on settlements, the construction even of relative sequences is difficult; it was, in passing, incorrect of Harding (1970: 236) to state that deep stratification is absent on British

sites of the pre-Roman Iron Age, for it exists at such sites as Ham Hill and South Cadbury Castle. Whilst continental influences may be distinguished in the designs of certain classes of objects, for example, brooches and sword-scabbards, most of the forms are distinctively British. Therefore, whereas very approximate termini post quos may be provided by continental influences (in so far as the latter are datable), certainty in dating is one stage further removed from the ultimate source of absolute chronology, the Classical world.

Since the earliest closely datable contexts belong to the latter part of the first century B.C., there will, therefore, be an automatic in-built tendency for chronological attributions to gravitate towards the end of the period. For example, if a distinctively British type of brooch had been current from the third to the first centuries B.C., it would only be archaeologically datable at the end of its 'life'. Indeed, it might be very difficult to distinguish chronologically between such a type and another that was only made and used in the latter part of the first century B.C.. Until good stratified sequences can be built up from the excavation of settlement-sites, there can be no way of getting round this difficulty; it would be idle to pretend that natural scientific techniques of dating are yet anything like precise enough to get round this problem. Moreover, it will be a long time before such sequences will be of value in dating the kinds of objects that are the subject of this thesis, for they are, in any case, rarely found even in large-scale excavations.

Yet another major 'distortion' in chronology is likely to have been



occasioned by the strife and social uncertainties consequent upon the Roman invasion of Britain from 43 A.D.. It is probable that larger numbers of hoards were buried for safety and not recovered in this period than at other times. Therefore, there is a greater chance for datable associations to be available for this period than for others. Nevertheless, these and other factors make it relatively easy to determine which types were, and which types were not, current at the time of the Roman Conquest.

Social practices also give an unevenness to the chronology of the bronzes. For example, none of the terrets from southern Britain has ever been recorded from a burial (with the irrelevant exception of Nos. 35 and 51, which were deposited in pagan Saxon burials). In view of the large number of terret-finds, and of the considerably larger number of burials, it seems unlikely that terrets were ever placed in burials in southern Britain in the pre-Roman Iron Age. There is thus a considerably diminished likelihood of precisely dating terrets than there is for mirrors or vessels which have often been found in burials.

In view of the fact that most of the datable contexts belong to the middle of the first century A.D., and that none are available before the latter part of the first century B.C., I intend to commence the discussion of the bronzes' chronology with the presumptively latest series of objects, and then to move gradually backwards in time until the earliest objects are reached.

### 30.3.2. The hoards from Santon and Seven Sisters

The hoards from Santon (Norfolk) and Seven Sisters (Glamorgan) are of

particular importance for chronology, because of the variety of their contents, and since their dates of deposition can be fairly closely tied down on historical grounds. Each has a firm terminus post quem, provided by the presence of Roman military equipment; it is most unlikely, therefore, that either was deposited before the Claudian Invasion. However, one cannot be quite as firm about the latest dates at which they could have been deposited.

In addition to brooches of first century A.D. types (R.A. Smith 1909b: Figs. 9-10; C. Fox 1923: Pl. XVIII.5-8), the Santon hoard contains hinges (R.A. Smith 1909b: Pl. XVI. No. 2, bottom row) of the kinds that were fitted to loricae segmentatae (Hawkes and Hull 1947: 337-8, Pl. CII.6, 10-15; Robinson 1969: 4-5, Figs. 2-3). Since Santon lies in the area once occupied by the Iceni, it is unlikely that these fragments of military equipment would have been available for incorporation in a hoard for long after Boudicca's rebellion of A.D. 60-1, the last occasion on which the Roman army saw action in East Anglia. G.A. Webster (1970: 193) considers that other traces of Roman military activity in the Santon area ~~were~~ most likely to date to the Boudiccan rebellion and shortly after. It is tempting to date the deposition of the Santon hoard to the early sixties. In any case, the widest chronological range for the deposition of the hoard cannot be more than about twenty years, consequent upon the Claudian Invasion. There can be little doubt that the hoard is the most precisely datable deposit of its kind from southern Britain.

The Seven Sisters hoard contains Roman cavalry-equipment (Grimes 1951: 123, Fig. 40.11-15; J.L. Davies: pers. comm.). Jarrett (1965: 37) has argued convincingly that the most likely historical dating for the hoard is during the period A.D. 49-74. The argument is based on the fact that the hoard was deposited in Silurian territory, and on the attractive theory that the Roman equipment was captured by members of the Silures before they finally succumbed to Roman rule in A.D. 74. The earliest Roman campaigns in Silurian territory were those of P. Ostorius Scapula in A.D. 49 (Jarrett 1965: 26-7). Further weight is given to Jarrett's dating by the fact that the types of metal equipment found in the hoard were replaced by different types in the Flavian period (D.R. Dudley and G.A. Webster 1965: 194).

Between them, the Santon and Seven Sisters hoards contain a great variety of southern British late pre-Roman Iron Age bronzes. This gives a good start in building up a list of forms current in southern Britain at the time of the Claudian Invasion. The following types are represented in the Santon hoard: baluster ferrules (Nos. 138A-B), nave-bonds (Nos. 145-7), part of a Group III (two-link) bit (No. 179), Group IIA strap-unions (Nos. 206-7), ?part of a strainer, i. e. Group III bowl (No. 398), mounts from buckets of Groups III and IV (Nos. 419 and 425), and <sup>the</sup> only southern British specimen of a Group I cauldron (No. 429), Group I decorative strips (No. 442), and weighing-devices (Nos. 478A-D). In the Seven Sisters hoard there are: Group IXA terrets (No. 85), parts of bits of Groups II and VI (Nos. 166 and

184), a Group II strap-union (No. 212), tankard-handles of Groups II (Nos. 373-4), III (No. 375), IV (No. 376) and V (No. 377), and a balance-weight (No. 479).

The lists are interesting, for they reveal that quite different forms of the same functional classes were in use in southern Britain in the middle of the first century A.D.. For example, it is apparent that different forms of bridle-bits, strap-unions, and tankard-handles were in use at this time.

The information provided by these two hoards and by the contexts of a few other objects enable us to add to the list in the penultimate paragraph, and to suggest dates for the deposition of certain other hoards which I shall now consider.

### 30.3.3. The hoards from Colne Fen, the Polden Hills, Saham Toney and Westhall

The Santon hoard provides the first stage in assessing the dates of the hoards from the Polden Hills (Somerset) and Westhall (Suffolk). It has been claimed (R.R. Clarke 1940: 69; Megaw 1963: 30-1) that the latter may be assigned to the time of Boudicca's rebellion, but the argument is hardly convincing. The hoard was discovered on the site of a settlement. Harrod (1855: 454) records that "much burnt earth and fragments of pottery" were found in the vicinity of the hoard; it seems a little fanciful to suggest that such a commonplace feature of a settlement should be interpreted as "the remains of its destruction at the hands of the over-zealous Roman troops" consequent upon the Boudiccan rebellion

(R.R. Clarke 1940: 69). R.R. Clarke (Ibid.) assumed that the Roman bronze lamp found at the same time as the hoard (Harrod 1855: Pl. XXXVIII Fig. 4) actually formed part of it; an early account (Archaeol. J. 12 (1855): 276) makes it clear that the lamp was found separately and not in direct association with the hoard. In passing, it may be noted that this kind of lamp cannot be as closely dated as R.R. Clarke (1940: 69) claimed; such lamps were current in the latter part of the first century and in the second century A.D. (Loeschke 1919: 323-5, Type XXI, Taf. XXI; Menzel 1954: 107-9, nos 673, 676 and 682, Abb. 89.7 and 10, 90.2). It may also be observed that evidence for early to mid-first century A.D. occupation has recently been discovered in the area in which the hoard came to light (Rudolf 1964); none of the ceramic material found in 1855 has been preserved.

The Westhall hoard shares with the Santon hoard baluster ferrules (Nos. 139A-F), Group IIA strap-unions (Nos. 208A-B), and a fragment of a Group III bucket-mount (No. 421). The most important other objects in the Westhall hoard are the eight Group VIIIA terrets (Nos. 72-5). Another Group VIIIA terret (No. 70) was probably deposited after the Claudian Invasion, whilst a fragment of a further specimen (No. 67) was found in the Claudio-Neronian Erdkastell at Hofheim, West Germany. The latter must surely have been taken to Germany by a soldier who had served in south-eastern Britain in the early years of the Roman Conquest of southern Britain. It is a vital piece of evidence in indicating that Group VIIIA terrets were current in the middle of the

first century A.D.. In assessing the date at which the Westhall hoard was deposited, it may be noted that baluster ferrules have also been found in mid-first century A.D. contexts at Colchester (Nos. 137A-C), and that two very similar animal-ornamented sheet bronze discs have been found in the Santon and Westhall hoards (R.A. Smith 1925: Fig. 168; C. Fox 1958: Pl. 37b). Taken together, all these links suggest that the Westhall hoard too may well have been deposited in the middle of the first century A.D..

The hoard from the Polden Hills in Somerset contains many objects of which the Group III bits (Nos. 171-8) and the Group IIA strap-union may be paralleled in the Santon hoard, and the pair of ?rein-hooks (Nos. 183A-B) in the Seven Sisters hoard. A closer analogy for Nos. 183A and B is a fragment from a mid-first century context at Colchester (No. 181). Six brooches were also included in the Polden Hills hoard (R.A. Smith 1925: Fig. 165) (Fig. — ). The three penannular brooches are of types which cannot be closely dated (Fowler 1960: 176, types D2 and D4); the other three are related to Hawkes and Hull's Types IV and V (Hawkes and Hull 1947: 310-2, Pl. XCI.36-46, XCII.47-50). The type represented by the largest of the three (R.A. Smith 1925: Fig. 165) is datable to the first two-thirds of the first century A.D., apparently going out of fashion by Flavian times. The smallest of the three (Fig. — ) is an incomplete specimen of the 'dolphin' type, a type that is normally considered to have come into fashion in Neronian times (Hawkes and Hull 1947: 311; Collingwood and Richmond 1969: 295). On the basis of the brooch types a date in the fifties or sixties seems likely for the deposition of the Polden Hills hoard.

The most numerous class of objects in the Polden Hills hoard is the terrets (Nos. 15-7, 45-6, 55-63). No reasonably close parallels are available elsewhere for Nos. 15-7 which are therefore of no further chronological value. The presence of Group VII terrets (Nos. 55-63) is of value, for no other terret of this type has been found in a chronologically useful context. That Group VI terrets were also current at the time of the Roman Conquest is suggested not only by the two in the Polden Hills hoard (Nos. 45-6), but also by two others in Flavian contexts at Wroxeter (No. 50) and Newstead (Curle 1911: 298, Pl. LXXV.2); others have been found in the 'Stanwick' hoard (MacGregor 1962: nos 51-60, 65-9). MacGregor (1962: 36-7) has dated this hoard and its contents to the third quarter of the first century A.D.; however, I doubt whether the parallels that may be adduced for the various objects permit such a close dating. Whilst it is probably unlikely that such a large collection of vehicle- and harness-fittings and weaponry should have been deposited after the governorship of Petillius Cerialis (A.D. 71-4) who was responsible for subduing the Brigantes, it is doubtful whether there is sufficient evidence to postulate the earliest date at which the hoard may have been deposited. However, it may be observed that the hoard also contains Group II bridle-bits (MacGregor 1962: nos 37-50, reconstructed in Fig. 3), and 'cheekpieces' (Ibid.: nos 19-21); a specimen of the former type is present in the Seven Sisters hoard (Nos. 166A, B), whilst 'cheekpieces' also occur in the Polden Hills hoard (Nos. 236-8). Besides the objects already mentioned, the hoard

also contains 'har<sup>o</sup>ness-brooches' (Nos. 241-4), three 'dolphins' (Nos. 247-9), other specimens of which have been found in Roman contexts (see Chapter 12), a chape for a scabbard of Late la Tène tradition (No. 275), and three conical shield-bosses (Nos. 312A-C); as has been noted above (Chapter 17.4.2.), other conical shield-bosses from Britain have been found in early to mid-first century A.D. contexts.

Two small deposits of bronzes from eastern England may now be brought into the discussion. The first, from Colne Fen (Huntingdonshire), comprises three baluster ferrules (Nos. 137A-C) and two enamelled bronze Group II linchpin-heads (Nos. 106-7); the former are, as we have seen, paralleled in the Santon and Westhall hoards and at Colchester (Nos 136, 138-9).. The manner in which the linchpin-heads are ornamented - with champlevé red enamel and blue glass, the insets bordered by incised grooves - is characteristic of much southern English work on types current in the middle of the first century A.D. (cf. Nos 65-6, 68-75, 203-8). These features, together with the fact that baluster ferrules were current at the same time, suggest that the Colne Fen bronzes may have been deposited at or near the time of the Roman Conquest.

The other deposit, from Saham Toney (Norfolk), contains five Group IXB terrets (Nos. 91-4), a Group II bridle-bit side-ring (No. 165), and a Group IIB strap-union (No. 209). It seems reasonable to conclude (see Chapter 2.2.8.2.) that Group IXB terrets were



current in early Roman times, whilst the Seven Sisters hoard indicates that Group II bridle-bits were in use in the third quarter of the first century A.D.. The rectilinear nature of the designs on the Saham Toney pieces contrasts strongly with the curvilinear work seen in the Santon and Westhall hoards, but compares closely with that on the terrets, bit-fragments and strap-unions in the Seven Sisters hoard (Nos. 85, 166, 212). It is of interest that such markedly different styles of enamelling should appear to have been current at the same time.

#### 30.3.4. Forms current at the end of the pre-Roman Iron Age

In the previous two sections, six of the southern British hoards have been considered. Whatever the precise dates of their depositions, they are of great interest, since they form a continuous chain of associations linked together by the different kinds of object contained in them. It seems reasonable to take the types represented by these six deposits as a nucleus of a group of types current in the final years of the pre-Roman Iron Age.

To recapitulate, the types that so far make up this group are: terrets of Groups VI-IX (and some of Group I), Group II linchpins, baluster ferrules, bronze nave-bonds, bridle-bits of Groups II, III and VI, Group II strap-unions, 'cheekpieces', 'harness-brooches', 'dolphins', Late la Tène tradition sword-chapes, conical shield-bosses, tankard-handles of Groups II-V, Group III buckets, Group I cauldrons, Group I decorative mounts, balances and steelyards.

The next step is to determine how many other types may be added to this list. It is probable that Group III linchpins belong here, since the two unprovenanced specimens (Nos. 116-7) are ornamented in the same champlevé enamel style as is seen on Group II linchpins and Group IIA strap-unions, and since specimens of the type occur in the 'Stanwick' hoard (MacGregor 1962: nos 75-8). The same kind of ornament as is seen on Nos. 116-7 is also found on the uncertain linchpin-terminal from Colchester (No. 118); this piece was found in a deposit attributed to the Boudiccan rebellion. The 'composite', Type IV bridle-bit (No. 180) is also a good candidate for inclusion in this group, for its rectilinear enamelling is matched by the vehicle- and harness-fittings in the Saham Toney and Seven Sisters hoards. As I have noted in Chapter 9.2.1, Group I pendants have been found in both pre-Roman and Roman contexts. They, too, must therefore have been made and used in the mid-first century A.D.. The context of the Group II pendant from South Cadbury Castle (No. 229) indicates that these pendants were also probably in use at this time.

The discovery of a hilt-guard-mount of 'Hod Hill' type at Waddon Hill (No. 297) indicates that at least this kind of sword-mount was current at the time of the Roman Conquest. I have suggested above (Chapter 13.11) that such hilts may have belonged to the same weapons as the type of chape found in the Polden Hills hoard (No. 275); there can be little doubt that they were contemporary. These are the only sword-fittings for which there is direct evidence of use at the time of

the Roman Conquest.

In addition to conical shield-bosses, it is probable that the putative shield-mount from St Mawgan-in-Pyder (No. 328) was made at a late date in the pre-Roman period, for it was found in a context that may have been of mid-first century date. It is evident, too, that the two shields from Tal-y-llyn (Nos. 318-9) were in use, if not made, in or after the mid-first century A.D., since they were associated with a Roman lock-plate (Spratling 1966: 229, Fig. 1a). Whereas in southern England Roman objects were imported from the first century B.C. onwards, there is no evidence for them in Wales before the middle of the following century. Furthermore, whilst there are no records of fighting in northern Wales after Agricola's lightning campaign of A.D. 78, the continuing presence of Roman garrisons in the area even beyond the second century (Nash-Williams and Jarrett 1969: 19-28, Figs. 4-11) indicates that much of Wales was never completely pacified, and that it is quite likely that there would have been a native need for weapons well into the Roman period. It is clear, therefore, that the Tal-y-llyn hoard may have been deposited at any time from the middle of the first century A.D. into perhaps the second or even third century.

Savory (1964a; b; 1968a) has argued that the Tal-y-llyn shields were made by the second century B.C.. However, the arguments advanced by him are difficult to sustain, for few of the allegedly close parallels that he adduces to support his case are all that similar. Whilst it is true that small details of the Tal-y-llyn designs may be paralleled in early

contexts in Britain and on the Continent, it is as easy to match them in late contexts in Britain (as he himself notes); it is difficult to see how the overall effects given by the Tal-y-llyn designs may be matched in the ornament of the very diverse objects on the Continent that are assumed to be the immediate forerunners. Savory's case for an early dating was based primarily on the following arguments (Savory 1964a: 21-3): first, that the form of the boss-mount of shield I (No. 318) is closer to continental prototypes than those from Llyn Cerrig Bach and Moel Hiraddug; second, that the pelta-shaped plaques may be linked with the relief pelta-and-loop motif on the Standlake scabbard, which, like the relief work at Tal-y-llyn, is outlined with rocked graver lines and is reserved against a field of rocked graver hatching like that used to contrast the triskeles on the Tal-y-llyn pelta-plaques; third, that rocked graver work is more characteristic of early than late pre-Roman Iron Age metalwork; and fourth, that the kind of triskele seen on the first shield is rare in Britain, but common on the Continent in the fourth and third centuries B.C..

These points may be considered in turn. It is doubtful whether one can argue that the boss-mount of No. 318 stands any closer than the boss-mount of No. 310 to continental prototypes; moreover, the date-range of the latter (from the ?third to the first centuries B.C.) is too great to specify when Nos. 310 and 318 might have been made. On the available evidence a date in the first century B.C. is as probable as one in the second or third. It may also be noted that No. 317 was found in

a burial of the mid-first century A.D.; this piece is no more different from the same continental prototypes than are Nos. 310 and 318. Savory's second point of comparison, the pelta-and-loop motif on the Standlake scabbard, does not seem close enough to warrant much emphasis; in any case, Savory has not heeded de Navarro's comments on the dating of this scabbard (see Chapter 13.3.). Thirdly, it is not true to say that rocked graver technique was more common at any one time in the British pre-Roman Iron Age than at any other; the same is true of the kind of triskele emblazoned on the first shield from Tal-y-llyn. In this connection, it may be observed that the Croft Ambrey Group I pendant (No. 219), which Savory used to support his early dating of the Tal-y-llyn finds, was found in a stratigraphically late context at the hillfort. The triskele-ornamented torc-terminal from Clevedon (C. Fox 1958: Pl. 25b) can hardly be used in chronological argument, not merely since it was a single find, nor even that it is unique, but also since its stylistic connections are the subject of such radically different views, as Savory himself notes. In the final analysis, it seems very difficult to hazard a guess at the date at which the first shield from Tal-y-llyn (No. 318) was made.

However, two features of the second Tal-y-llyn shield (No. 319) are of chronological value: the large admixture of zinc in the metal, and the tin-plating. Neither feature can be demonstrated to characterise any object known with certainty to predate the Roman period in Britain (Spratling 1966: 230). The occurrence of tin-plating on certain Hallstatt D

brooches (Savory 1968a: 98-100) is surely irrelevant to the present chronological argument; the fact that neither R. Joffroy nor H.-J. Hundt (cited in Savory 1968a: 98) know of any example of this technique in the continental la Tène Iron Age indicates the irrelevance of Savory's point. In passing, it may be observed that tin-plating appears more than once on native British work in Wales during the Roman Iron Age (Savory 1968a: 97). Although the number of published analyses of the composition of British pre-Roman Iron Age bronzes is small, further unpublished analyses have singularly failed to reveal any objects with a significant amount of zinc in their make-up (P. Craddock: pers. comm.). It is clear, then, that the second shield from Tal-y-llyn is unlikely to have been made before the middle of the first century A.D.; the presence of tin-plating on the Moel Hiraddug bronzes (Nos. 310 and 326) suggests that they too were made no earlier.

It is very probable too that mirrors were current in the middle of the first century A.D., for it would otherwise be difficult to explain the presence of No. 345 in a late first or second century A.D. grave outside the Roman fortress at Nijmegen in the Netherlands. It seems probable that the mirror was taken there by a soldier who had served in Britain; both Bogaers (1967: 75) and Hassall (1970: 136) have suggested occasions on which the mirror may have been taken there.

A few other finds provide evidence for forms current at the time of the Roman Conquest. The first is the discovery in the Claudio-Neronian fort at Waddon Hill of a Group III tankard-handle (No. 379),

thus corroborating the evidence of the Seven Sisters hoard. A Group I bowl-escutcheon (No. 383) comes from a probable mid-first century A.D. context at Bagendon, as does another from Hod Hill (No. 388). Not only the context of No. 397, but also the ceramic parallels noted in Chapter 21.4, indicate that strainer-bowls belong to this phase, thus adding further weight to the context of No. 398. Stead (1967: 47) has shown that it is reasonable to think that the second burial at Stanfordbury, which contained No. 446, is to be dated to the middle of the first century A.D., which provides further evidence for indicating that Group I decorative mounts were current at this time. The context of No. 459 indicates that Group I enamelled studs were also current then.

#### 30.3.5. Other chronological datum-points.

Before moving on to consider the dating of bronze-types before the end of the pre-Roman Iron Age, we must first examine certain other deposits that seem likely to provide valuable chronological clues.

I have examined elsewhere (Spratling 1970d: 13-4) the dating of the Birdlip and St. Keverne mirror burials. I came to the conclusion that, whilst the former cannot be more closely datable than to the early first century A.D., the latter is even less precisely assignable, having taken place at any time during the whole of this century. I find no reason to modify that conclusion here. The Birdlip burial contained Nos. 335, 385, and 400, the St. Keverne burial No. 351.

Other burials of chronological value are the richly-furnished graves of south-eastern England of the second half of the first century B.C.

and the early first century A.D.. Three burials contained imported bronze wine-services of Italian manufacture, of kinds that are found in Late la Tène contexts on the Continent (Birchall 1965: 288-91, Stead 1967: 46-8); these are the two burials from Welwyn and the burial designated 'Y' at Aylesford (Birchall 1965: 244). Between them these three late first century B.C. graves provide datum-points for Group I buckets (No. 406), Group II tankard-handles (No. 380), and for two other vessel-handles (Nos. 381A and B). Confirmatory evidence for such a dating of Group I buckets is provided by the specimens from Goeblingen-Nospelt, Luxembourg (see Chapter 22.2.). Another burial at Aylesford, Birchall's grave 'X' is closely linked by its pottery to Aylesford 'Y' (Birchall 1965: 248) and is therefore probably of similar date; Aylesford 'X' contained the Group I tankard-handle No. 359.

The dates of three other burials of interest here are, however, not as easy to define: the richly-furnished graves from Hertford Heath (Holmes and Frennd 1964) and Welwyn Garden City (Stead 1967), as well as the Colchester mirror burial (C. Fox and Hull 1948). Like the burials from Aylesford and Welwyn just considered, these burials do not include vessels of Arretine and Gallo-Belgic types; the question of importance here is whether this absence is chronologically significant. Their presence is generally held to give a time-bracket of about half a century from about the birth of Christ (Hawkes and Hull 1947: 202-4; Stead 1967: 47). Stead (1967: 47) has argued that the absence of such wares from the Welwyn Garden City burial is significant, because



of the large number of vessels from the grave. When the richness of the grave is also considered, including, for example, an imported silver cup, it does seem likely that the absence of Gallo-Belgic ware is chronologically significant, and that the burial should thus belong to the final two or three decades of the first century B. C.; the amphorae confirm such a dating (Peacock 1971: 175, 185). The absence of Gallo-Belgic and Arretine ware from the Colchester mirror-burial led Hull (in C. Fox and Hull 1948: 136) to assign it to the period c. A. D. 10-25; but if this absence is significant (which is less certain in view of the smaller number of vessels here than at Welwyn Garden City), then the date of interment ought to be earlier; a further argument in favour of a date earlier than that of Hull's is the fact that hardly any of the forms can be matched in the ceramic range of the Sheepen Farm site, occupation of which was considered to have commenced c. A. D. 10 (Hawkes and Hull 1947: 27-30). The pottery from the Hertford Heath burial led Stead (1967: 48) to suggest a date slightly later than that from Welwyn Garden City which he considered to have taken place in the last quarter of the first century B. C. (Ibid.: 47). Peacock (1971: 177, 185) has shown that a date in the second half of the first century B. C. is likely for the Hertford Heath burial on the basis of the amphora found in it (Ibid.: Fig. 35.2). Whilst I would therefore provisionally assign the Colchester, Hertford Heath and Welwyn Garden City burials to the last quarter of the first century B. C., it seems to me that, despite Birchall's recent study (1965: 249-56), a detailed re-assessment is needed of the

pre-Roman wheel-thrown ceramics in the area to the north of the River Thames, if we are to come any closer to understanding precisely how closely these burials can be dated. Between them, these three burials provide a chronological datum-point for a mirror (No. 339), ?shield-mounts and Group I ornamental studs (Nos. 323 and 421), a handled cup (No. 382), and a Group III strainer-bowl (No. 399).

A further burial from Colchester, that excavated from the Lexden Tumulus in 1924 (P.G. Laver 1927), has a terminus post quem of 17 B.C., provided by a denarius of Augustus made up into a medallion. Peacock (1971: 175, 183) has argued that the amphorae in this burial indicate a date in the last fifteen years B.C.. This date provides confirmatory evidence for the use of Group I ornamental studs at this date (No. 465); it is of interest that the Lexden studs are particularly close to those from Hertford Heath (No. 421).

Another burial of pre-Claudian date is the grave of a warrior at Owslebury (Hampshire), which contained No. 311, as well as a Late la Tène sword and belt-hook; the belt-hook is closely paralleled on the Continent at such sites as Ornavasso (Bianchetti 1895: Tav. XIII.16), Somme Bionne (Morel 1890: Pl. 14. Fig. 14), and Staré Hradisko (Filip 1956: Pl. CXXX.9). These parallels and the central position of the burial within the Owslebury cemetery (Collis 1968a: 25) suggest that the warrior was probably interred in the latter half of the first century B.C..

The extraction of an uninscribed Gallo-Belgic quarter-stater from

one of the terminals of the ring-terminal torc from Hoard E of the Snettisham Treasure (R.R. Clarke 1954: 59-66) provides an important clue for the dating of objects ornamented in a similar manner to this torc; this style, which I here term the 'Ulceby-Snettisham' style, is very similar to that on certain Group I bits of eastern English tradition (Nos. 152, 159, and 161). The coin is of D.F. Allen's type Dc (D.F. Allen 1961: 160), a type also represented in the Le Catillon hoard (Ibid.: 161), and by two further specimens at Snettisham (Ibid.: 160). I have argued above (Chapter 30.2.3.) that doubt must be cast on the precision with which the Le Catillon hoard can be dated, and that far from being securely datable to Caesarian times, it might well have been deposited as late as Augustan times. It must be stressed, too, that it by no means follows from the fact that the Dc quarter-stater in the Le Catillon hoard was worn, that the coin from the Snettisham torc was included in that torc at an earlier date than the deposition of the Le Catillon hoard, as has been implied by Owles (1969: 210) and Brailsford (1971: 17). In view of the absence of specifically Icenian issues (q.v. D.F. Allen 1970) from the Snettisham Treasure, it seems likely that its deposition was not later than the end of the first century B.C.. When, however, before then the ring-terminal torc was made and deposited is, I think, very much an open question. Nonetheless, a date within the first century B.C. would seem reasonable, especially in view of the tubular torcs recovered from the site (R.R. Clarke 1954: 36-46; see above Chapter 30.2.2.).

It is unfortunate that the circumstances of discovery of the Llyn Cerrig Bach deposit prevent us from deciding whether the objects were thrown into the peat-bog on one, or on more than one occasion. This uncertainty reduces the chronological value of the deposit to almost nil; for even if one were able to date closely any of the objects found there, one could not transfer that date to any of the others. The absence of specifically Roman types from the deposit lends credibility to C. Fox's argument (1947a: 60) that the campaigns of either Suetonius Paulinus in A.D. 60 or Agricola in A.D. 78 provide a terminus ante quem for it.

#### 30.3.6. Beginnings and development

Now that it has been established with reasonable certainty which forms were current at the end of the pre-Roman Iron Age, and that certain other chronological datum-points have been indicated, we are ready to consider how far back in time the earliest of the bronzes encompassed by this thesis may have been made. Because it is not yet possible to invoke natural scientific means to date the bronzes, or associated finds, this task can only be attempted by reference to continental yardsticks. However, with the exception of Group I buckets, the only kinds of objects that bear any large measure of continental la Tène influence in their designs are weapons; it is important that this is so, for few of them have been found in chronologically indicative contexts. Nonetheless, I have shown (in Chapters 13-17) that very few weapons stand very close to continental prototypes; hardly any could be considered to be imports. Thus the chronological uncertainties concerning the continental pieces will be

further compounded in attempting to date the British series. Certain features on, for example, scabbards provide valuable clues in considering the dating of types which show no sign of continental influence.

I have indicated above (Chapters 13 and 17) that the earliest detectable continental influences on the weapons listed in the Catalogue (Nos. 251-329) are derived from Middle la Tène weaponry. Thus the earliest pieces were probably made in the second or even third century B. C. (see Chapter 30.2.2.); likely candidates for such an early dating are the swords and sword-scabbards discussed in Chapter 13.3-6. However, all the other scabbards exhibit to a varying extent influence from Late la Tène weapon-design, and are, therefore, on present evidence (see Chapter 30.2.3.), unlikely to have been made at an earlier date than the first century B. C.; indeed, it is possible that none of them are earlier than the middle years of that century. However, it does not seem possible at present to determine whether or not pieces of Middle la Tène tradition that exhibit no Late la Tène influence in their designs - for example, the chapes and scabbard-frames considered in Chapter 13.6 - continued to be made alongside scabbards which do exhibit Late la Tène influence.

It is generally considered that at least two of the shields (Nos. 320 and 322) are of Middle la Tène date (e.g. Sandars 1968: 261-4; Jope 1971a: 64). This judgement is based largely on stylistic criteria, although typological reasoning is also sometimes invoked. The latter view holds that they are anterior to such shields as No. 305, but I have suggested above (Chapter 17.4.2.) that this view may not be correct, and

(Chapter 17.3.4.) that the pronounced roundness of the principal bosses on Nos. 320 and 322 may have been due to contemporaneity with shields with hemispherical bosses. The foreign stylistic connections of No. 322 have been indicated by Jope (1971a). Whilst he noted that the earliest possible date for this shield is likely to be the later third century, it is far from clear how long the continental influences that he delineated were current on the Continent. Moreover, the stylistic closeness of the incised ornament on No. 321 to that on No. 322 indicates that many of the ornamental tricks found on the latter piece were still current in Britain in Late la Tène times. Thus, it seems very probable that the kinds of ornament seen on these two pieces was still in fashion when ornament of 'Ulceby-Snettisham' type was being produced. Jope (1971a: 64) has pointed out that the ornament of No. 320 is a

"translation into insular embossing of a style devised in tooled solid metal among the East Celts of the third century B. C."

From this he concludes that No. 320 is of similar date to No. 322.

However, whilst influence from Plastic style does seem apparent, similar treatment of metal surfaces may still be seen in the solid in Britain in very late contexts, for example, on Nos. 222, 367-8, 375-6, and 380; furthermore, the bird's heads on No. 320 compare closely with those on No. 321 but find no parallel in anything produced in continental Plastic style.

From the consideration of forms current at the end of the pre-Roman Iron Age, certain points are of importance here. The first is

the large number of pieces profusely ornamented with champlevé enamel. Whilst enamelling of other kinds can be demonstrated at an earlier date, there is no conclusive evidence that champlevé work precedes the first century A.D.. The second is that, whereas most of the functional classes are represented in the middle of the first century A.D., certain groups within each class do not occur at all, for example, terrets of Groups II, III, IV and V, Group I bridle-bits, and Group I strap-unions. Now, it is interesting that one of the characteristics of these terrets, bridle-bits and strap-unions is the absence of enamelling. This suggests that these types belong to an earlier complex. Further points give weight to this hypothesis. The first is the presence on certain Group I bits (Nos. 152, 159 and 161) of relief ornament of the 'Ulceby-Snettisham' type, for which the only datum-point (see Chapter 30.3.5.) is probably in the first century B.C.. The second is the occurrence of some of these types at Glastonbury and Meare (Nos. 23-4, 36, 149, 197-8); none of the numerous finds from these two sites include types which are diagnostic of the final years of the pre-Roman Iron Age. The third is the absence of fully-developed stops on Group III-V terrets, a feature that is characteristic of terrets current at the end of the pre-Roman Iron Age. The fourth is the hypothesis that Group II bits were developed from Group I bits (see Chapter 7.3.4). The fifth is the occurrence of Group I bridle-bits and Group V terrets at Arras. Whilst the Yorkshire cart-burials are particularly difficult to date (Stead 1965a: 81-4), with one exception there is no sign in any of them of types current

at the end of the pre-Roman Iron Age. The exception is a Group III linchpin; this, however, appears to be a long-lived type, for besides specimens with champlevé enamel (Nos. 116-7), two others (Nos. 113 and 115) have ornament of 'Ulceby-Snettisham' type. It is not clear how far the Yorkshire cart-burials stretch back into the pre-Roman Iron Age, but I doubt whether there is any sound evidence for linking them with the Marnian Early la Tène series (see Chapter 7.2.3.). In view of the recent demonstration of the commonness of vehicle-burials in Middle and Late la Tène Europe (Joachim 1969), I doubt whether it is possible, or even necessary, to argue that the first Yorkshire cart-burials may have been as early as Barrow 1 at Cowlam, which contained a la Tène Ia assemblage (Stead 1965a: 84).



## 31. Distribution-patterns

### 31.1. Introduction

I have already (in Chapters 2-28) commented briefly upon the distributions of the types considered in this thesis. The purpose of this chapter is to discuss these distributions in toto, and to consider their significance.

It is always difficult to assess the significance of archaeological distribution-maps, particularly when they depict portable artifacts rather than field-monuments, and when the total number of specimens of each type is very small (as is so often the case in the present study). As with all archaeological research, it is impossible to know whether or not the data to hand represent a truly random sample of the original situation. The way in which only a few new discoveries can quite quickly alter our conception of the distribution of late pre-Roman Iron Age decorative metal-work, is strikingly illustrated by the torcs of precious metals. Until the last war, not one had come to light in east Anglia, whilst examples were known in most other parts of Britain; however, within the past thirty years a spate of new discoveries in Norfolk and Suffolk - from Bawsey, Ipswich, North Creak, Sedgeford, and Snettisham (R.R. Clarke 1951a, 1954; Owles 1969, 1971; Brailsford 1971; Burns 1971) - appears to indicate that east Anglia was one of the principle centres of torc-production. It was obviously impossible to predict this situation before the last war. In view of this, one must refrain from arguing that the distribution-patterns, as they appear at present, necessarily represent a true picture of the original situation; this point was completely overlooked by C. Fox (1943) when he

drew up his model of ancient settlement in Britain.

In an attempt to discover the biases caused by modern discoveries, I have plotted on a map, first all the finds represented in the Catalogue (Map 38), and, secondly, only those which have been made by chance, omitting objects found in excavations (Map 39). On each map, I have used differently sized dots to indicate the varying numbers of entries in the Catalogue for each site; I have done this, in order to indicate the extent to which certain sites will recur on the distribution-maps of different types. It is clear from the two maps that, with the exception of those at Colchester, the most prolific excavations have been in Dorset and Somerset. Nevertheless, it is interesting that excavations have made no difference to the general distribution of objects considered in this thesis.

It is, however, difficult to assess the density of discoveries, and to know to what extent they reflect the ancient density-pattern. It is, perhaps, easier to consider the 'empty' areas of southern Britain than to try to decide whether the most densely-packed areas are genuinely representative. Broadly speaking, the finds are concentrated in the 'Lowland Zone', as defined by C. Fox (1943: 28-32, Map B), and rare in the 'Highland Zone'. Nevertheless, this model is too simplistic, and ignores

"the very real physiographic differences between the coast and riverine lowlands of western Britain and their hinterland of mountain and moorland. In terms of basic farming potential for a start, these lowland strips have more in common with lowland England and most of Ireland than they have with the true Highland Zone of Britain" (Alcock 1972: 106).

When Maps 38-9 are considered, it is clear that Alcock's model (cf. also Alcock 1963b: 5-8; Savory 1964a: 26, 30) is more appropriate, for the finds from Wales, Devon and Cornwall occur hardly at all in the mountainous hinterlands. Indeed, only two of the Welsh finds, Tal-y-llyn and Trawsfynydd, have been made in the really bleak and inhospitable parts of the country, though even these findspots are on the fringes of mountain-massifs (cf. C. Fox 1958: Map B). In the 'Lowland Zone' two 'empty' areas stand out — the Middle-Upper Severn - Upper Trent-Dee basin, and the Weald. It seems likely that the rarity of finds in the former area is due very largely to a lack of adequate research and of local antiquaries taking note of chance finds rather than to a genuine poverty of the area in the later pre-Roman Iron Age, as maps of other prehistoric finds suggest (C. Fox 1943: passim; Ordnance Survey 1962; Burgess 1969: Figs. 6-8, 10, 12, 14, 16, 19; J. May and Wheeler 1971: 73-4). The same may be true of the Weald, where hardly any pre-Roman Iron Age finds and sites have been recorded (Ordnance Survey 1962), and which is similarly devoid of finds from other periods of prehistory (C. Fox 1943: passim; Burgess 1969).

These points must be born in mind when the following discussion of distribution-patterns is read. In this discussion, I consider first those patterns that show no apparent regionalism throughout Britain, then those that are confined to southern Britain, and finally those that indicate regionalism within southern Britain.

### 31.2. Generalised British distributions

Whilst their distributions all differ in detail, the following types are found not only in southern but also in northern Britain, and must therefore be considered as 'all-British' types: terrets of Groups I, VI and IXA, 'mini-terrets', Group III linchpins, Group II bridle-bits, Group IIB strap-unions, pendants of Groups I and III, 'cheek-pieces', 'dolphins', anthropoid-hilted daggers, circular mirror-plates, Group I mirror-handles, cylindrical tankards, Group IV tankard-handles of solid type, Group II buckets, 'Santon' and 'Blackburn Mill' cauldrons, Group I ornamental studs, and 'spoons'. But not all of these types are exclusively British, for anthropoid-hilted daggers, circular mirror-plates, 'Santon' cauldrons and 'spoons' have also been found in Ireland and on the Continent. However, I have demonstrated above (Chapter 26.1.) that most of the Irish spoons are different in design from those found in Britain.

### 31.3. Southern British types

The majority of types considered in this thesis is restricted to southern Britain, even though some of them are closely related to, or the same as types also found on the Continent. I include too in this section certain types that have also been found in the East Riding of Yorkshire, namely terrets of Groups IIA and V, bronze nave-bonds, Group I bridle-bits, Group IA strap-unions, those sword-scabbards, scabbard-frames and chapes discussed in Chapter 13.6-7, and enamelled Group I ornamental studs. All the rest of the south British types are restricted to the area south of

present-day Lancashire and Yorkshire.

Those types that are restricted to southern Britain, but whose patterns of distribution show no obvious regional preferences, comprise the following: terrets of Group VII, 'horn-caps', bridle-bits of Groups III and VI, Group IIC strap-unions, those scabbard-forms and chapes . discussed in Chapter 13.8-9, shield-boss mounts of forms derived from continental bandförmig types, shields with all-metal spines, triple-bossed shields, mirrors with decorated backs, fancy mirror-plate shapes (i. e. those other than truly circular), tankard-handles of Groups I, II and III, Group II bowls, buckets of Groups I and III, Group II cauldrons, and weighing-devices.

#### 31.4. Regional distributions in southern Britain

Excluded from the previous section were several types that are only found in restricted parts of southern Britain. Sometimes, the distribution-patterns of certain types occur in the same general areas, which may suggest that regional 'style-zones' - in the sense that this term has been used by Cunliffe (1966) - existed in the industries and groups that made and used the types under consideration in this thesis.

Several types have only been found in eastern England, that is, in the counties from East Riding down to Kent, comprising mostly East Riding, Lincolnshire, Cambridgeshire, Huntingdonshire, Bedfordshire, Hertfordshire, Norfolk, Suffolk, Essex, Greater London, Surrey and Kent. In no case does any distribution-pattern completely encompass this area, but the manner in which the patterns overlap suggests that the region may have formed

what may be regarded as a single style-zone (Maps 4-0-1). Types confined to this area include: terrets of Groups VIIIA-D and IXB (although one Group VIIIA terret has been found in Kirkcudbrightshire), enamelled Group II linchpin-heads, baluster ferrules, Group IIA strap-unions (although one (No. 205) has been found in Somerset), Group I bridle-bits of Eastern English tradition, the closely similar scabbards from Bardney and Battersea (Nos. 253-4), another pair of closely related scabbards (Nos. 267 and 271), the only two all-metal spined shields (Nos. 320 and 322; although a mini-shield of this type from Dorset (No. 331) suggests that the type may not have been confined to eastern England), mirror-handles of Groups IIB and IVB, two closely related Group II tankard-handles (Nos. 364 and 369), a pair of very similar Group III tankard-handles (Nos. 363 and 372), Group I buckets with swing-handles (Nos. 406-10), and Group III bowls. Eastern England is also the prime centre of the 'Ulceby-Snettisham' style of ornament, and where the only examples have been discovered of the ornamental technique formed by three almond-shaped slugs placed end-to-end within an encircling raised ring (on Nos. 159, 267, 302 and 322). The use of glass discs (as opposed to enamel) in circular insets is principally an eastern English characteristic; only two examples of this technique have been found outside eastern England, in Dorset and Sussex (on Nos. 462 and 459). It is of interest that the only mirror-back designs whose basic layouts are not symmetrical about a central vertical line are found in East Anglia (Nos. 333, 342, 346 and 350); however, whilst mirror-backs with designs

that are symmetrical about a central vertical line are principally found in areas other than east Anglia, the design on the Colchester mirror-back (No. 339) indicates that asymmetrical and symmetrical designs are not found in altogether mutually exclusive areas.

A much more restricted distribution is suggested for shields with peltate plaques. Since only two examples of this type are known (Nos. 310 and 318), one must be careful not to place too much weight on the fact that they were both found in northern Wales. Nevertheless, when all the southern British shield-forms are taken into consideration, the restricted distribution of those with peltate plaques does appear to be significant, especially when it is recalled that the spine-mount on No. 310 provides the closest parallel for another northern Welsh find, the shield-boss mount from Llyn Cerrig Bach (No. 308).

It is doubtful, however, whether northern Wales can yet be regarded as a principal style-zone, in the same sense as eastern England. This is not to deny that workshops in northern Wales may not have been restricted to the production of distinctive kinds of shields; the significance of the Llyn Cerrig Bach hoard is considered below (Chapter 32.2.). Indeed, the whole of Wales appears to have belonged to a much more widespread zone that, for reasons that will shortly become apparent, I intend to term 'western British'. Whilst Wales forms part of this zone, it seems (from known discoveries) that the 'core' of this zone lay in England; I suspect that as the pace of fieldwork in Wales quickens, the apparent emphasis on England will gradually lessen. During the late pre-Roman Iron Age there

appears to have been a shift south-westwards in the 'core' of this zone. Early in the period, the principal core of the zone extended from Northamptonshire to Dorset, whilst the forms that characterise the final phase of the pre-Roman Iron Age extend principally from Gloucestershire and south Wales to Cornwall.

The types that comprise the earlier group (Map 4<sup>2</sup>) are: terrets of Groups II (but not IIA), III, IV and V, two closely related Group I terrets (Nos. 6 and 18), Group I bridle-bits of western British tradition, the two Group II pendants (Nos. 228-9), the chapes and scabbard-frames of Middle la Tène tradition discussed in Chapter 13.6, three closely similar all-metal scabbards of Middle la Tène tradition (Nos. 263 and 273, and the recently discovered scabbard from Henley), Abingdon-type scabbards (Nos. 251 and 255), and the South Cadbury Castle-Meare type of shield-boss mount (Nos. 309 and 313). Also of interest in this connection are the pair of iron loop-terminal torcs from Ham Hill and Spettisbury, the only iron specimens known (Hawkes 1941), and the distributions of iron sword-shaped and spit-shaped currency bars and of tapered iron plough-share bars (D.F. Allen 1967: 308-14, Figs. 1-2).

In the later phase, the distribution (Map 4<sup>3</sup>) is more truly western than before, the only central English finds being Nos. 189 and 340. The following pieces and types represent this 'western' style-zone: iron versions of Group II bits (cf. Chapter 7.3.5.), 'Hod Hill' sword-hilts and Late la Tène scabbard-chapes (cf. Chapter 13.10-11), dagger-scabbards with knob-chapes, mirror-handles of Groups IIA and IVA, the closely



related mirror-back designs on Nos. 335, 340, 343, and 352, together with the stylistically linked designs on Nos. 241-2, two pairs of closely similar Group III tankard-handles (Nos. 367 and 375, and 368 and 379, respectively), the only southern British examples of Group V tankard-handles - which differ from the Scottish specimens (cf. Chapter 19.2.5.) - Group I bowls, the use of arc- and ring-punches in ornamentation (on Nos. 84, 211, 243, and 335), and riveted rabbet joints (on Nos. 340, 343 and 353). Moreover, it is only in south-western England that small glass balls were placed in insets for ornamentation - on the Aust figurine (Brailsford 1953: Pl. XXII.3), and on the fragmentary collars from Trenoweth (Megaw 1967) and Greenhill, Weymouth (Megaw 1971: 149, Fig. 4). Mention may also be made of the similar construction of the Dorchester and Wraxall collars, of those from Portland and ?Dorset, and of those from Llandyssul and Trenoweth (Megaw 1971), all of which are western British finds, not closely paralleled elsewhere.

To conclude this section, I append a map that shows the distributions of some of the metal types that are restricted to the regions around the Irish Sea and/or to northern Britain (Map 44). The data are derived from the present thesis and from the works of others (Haworth 1969; Jope 1955a; Piggott 1950; Simpson 1966; Stevenson 1966). The map indicates that northern Britain formed a style-zone more or less mutually exclusive to those of southern Britain discerned above.

## 32. The localisation of workshops

### 32.1. Introduction

Megaw (1971: 145) has recently commented on the difficulties in attempting to isolate regional schools and to localise the workshops that produced the fine metalwork of the late pre-Roman Iron Age. One of the earliest, if not actually the first, attempts to tackle this problem was made nearly forty years ago by Leeds (1933a: 28ff.) who concluded that two schools - a 'western' and an 'eastern' - had existed in southern Britain. Although Leeds never plotted the constituent finds of these schools on a map, and although his arguments for discerning a 'western' school were justly refuted by Ward Perkins (1939: 188-9), it is nevertheless, of interest that the two schools were similar in distribution to (but by no means identical with) the two principal 'style-zones' outlined above (Chapter 31.4.).

Although Leeds (1933a: Fig. 33) plotted on a single map the distribution of the different types of bronze terrets and horse-bits, he did not consider the patterns primarily from a cultural view-point but rather the manner in which they matched "the trend of historical events before and after the (Roman) conquest" (Ibid.: 124). It was Ward Perkins (1939: 185ff.) who was the first to use distribution-maps to detail cultural-patterns in southern Britain as revealed by metal types; but in common with all writers from the 1930s until less than a decade ago, Ward Perkins overplayed the alleged seminal role of the 'Arras Culture' (= "the Yorkshire B invaders") in the development of British metal types (cf. Chapters 3.2.3. and 7.2.3.).

However, it was not until after the discovery of the Llyn Cerrig Bach deposit in 1943 that the task of identifying regional schools and workshops was taken up in earnest, by C. Fox (1945a, b, 1947a, 1949a, 1958, C. Fox and Hull 1948). His final thoughts on this problem were fully elaborated in 1958 (C. Fox 1958: esp. v, xxv-i, 143-5); the conceptual framework of this work was essentially that of his Personality of Britain, first published a quarter of a century earlier, and whose fourth edition appeared in 1943 (C. Fox 1943). As I have noted above (Chapter 31.1.) there are serious faults in the model propounded in the Personality of Britain, which have lately been criticised. The premises upon which Fox's arguments concerning the areas in which British late pre-Roman Iron Age fine metalwork were outlined in a few sentences which I quote here:

"When the number of finds in a given style or sub-style of our Celtic tradition is considerable, or the quality of a few exceptional, I have discussed the possibility of locating the area in which the workshop or workshops were situated. The comparative ease of travel in the Lowland Zone along such routes as the "Jurassic" and Icknield Ways and such a river as the Thames - maybe also Trent and Ouse - would seem to allow wide distribution of bronzes within the creative area, which is the east and south of Britain .... The northern limit of our creative art was probably in Yorkshire, but this may have extended into north-west Britain - near the Solway Firth in Kirkeudbright and Dumfries - at an early date. It is unlikely that any creative centres lay to the west of the Severn or the lower Dee: nevertheless, the number of examples of fine metal-work discovered in Wales is remarkable ...." (C. Fox 1958: v).

In order that we may assess the value of this statement and the detailed picture set out in Pattern and Purpose, it is necessary to go back to the Interim Report on the Llyn Cerrig Bach deposit (C. Fox 1945b) where the seeds of Fox's interpretation of southern British late pre-Roman Iron

Age art and metalwork were sown.

### 32.2. The significance of Llyn Cerrig Bach

The geographical argument was summed up in a 'List of imports, the probable sources of which have been determined' and in a 'Graphic analysis' of imports plotted on a map (C. Fox 1945b: 45, Fig. 20); both were later amended and enlarged after the recovery of further objects from the Llyn Cerrig Bach find (C. Fox 1947a: 61, Fig. 34). The objects regarded as imports will now be discussed in the order in which they were considered by C. Fox (1945b: 11-43) in his descriptive survey.

I begin with the bronze nave-bonds (Nos. 140-3) which Fox (1945b: 14; 1947a: 14) considered to have been imported from the Mendips on account of the close resemblance of Nos. 140-1 to No. 148. But this is scarcely a convincing argument, for it is equally likely that Nos. 148 were made in Anglesey together with Nos. 140-1; on the other hand, the presence of a double-cordoned bond in the Santon hoard (No. 146) indicates that the type was widespread, and that at present no one region can be held to be more prolific in double-cordoned bonds than any other.

Fox (1945b: 14-16) considered that the 'horn-cap' (No. 131) had been made "in or near the lower Thames Valley" on account of its alleged close resemblance to No. 120. However, I have argued above (Chapter 4.2.1.) that the resemblance is not all that close.

Fox (1945b: 19) went on to argue that it was probable that the Group III linchpin, No. 112, "typologically of eastern British origin, was imported from a Belgic district in the south-east", despite the very

wide distribution of the type and the fact that no regional differences in the type can be discerned. Thus, No. 112 could have been either imported from any part of England, or, in view of the widespread distribution of the type and the relative paucity of metal artifacts from Wales, made in Anglesey. The same is true of the Group I linchpin (cf. Chapter 3.2.1.); Fox (1945b: 19) was unable to discern its place of origin.

I have considered above (Chapter 7.2.1 -4. and 7.4.) Fox's arguments concerning the south-western origin of the bridle-bits from Llyn Cerrig Bach. I need only re-iterate here that the three most elaborate Group I bits (Nos. 153-4; and Fox's no. 49) are unique, as is the Group III bit (No. 169), that another Group I bit (represented by his nos 47-8) can indeed only be paralleled at Bredon Hill and Glastonbury (but not at Ham Hill, as I have argued (Chapter 7.2.3.), since the bit in question is not certainly of three-link type), and that the 'Irish' bit (Fox's no. 55) can only be paralleled closely by two finds from Ireland, both incomplete and only one with a known provenance - in Co. Donegal (Haworth 1969, nos A2-3), thus negating the argument that the Llyn Cerrig specimen was imported from north-eastern Ireland (C. Fox 1945b: 26-7). Again, the iron version of a Group II bit from Ham Hill can hardly be used to suggest that Fox's nos 56-7 were of southern origin, as he implied (Ibid.: 28; cf. Chapter 7.3.5.). It is probable that Fox's no. 86, identified by him as a bracelet (1945b: 21), was the side-ring of a Group I bit, from which the iron core had been lost by preferential corrosion. The parallels he drew for it (Ibid.: 25, 69) are not convincing; one only

needs to compare the piece with the descriptions and illustrations of the allegedly analogous pieces (Danes Graves: Greenwell 1906: 278; Stead 1965a: 93; Birdlip: Bellows 1881: Pl. XIII. Fig. 9; R.A. Smith 1909a: 332; Ham Hill: Hoare 1827: Pl. VI; Read's (Keltic) Cavern: Palmer 1922: Pl. VIII). There is thus no evidence to support the thesis that Fox's no. 86 was imported from south-west England.

Fox (1945b: 28) argued that the two Group I terrets (Nos. 10, 11) were imported from Yorkshire and south-west England respectively. However, the terret adduced to support the former argument, a specimen from Hunmanby (Stead 1965a: Fig. 24.1), though described by Fox as "undoubtedly of our pattern", bears very little resemblance to No. 10. Again, Fox used Nos. 6 and 18 to argue that No. 11 came from Somerset, although he admitted that these parallels were "not exact"; I agree with the latter judgement. I have argued above (Chapter 2.2.1.) that Nos. 10 and 11 resemble each other much more closely than they do any other terret. Fox (1945b: 28-30, 60) argued that the Group II terret, No. 22, was imported from the Mendip region, but, since parallels for it occur not only at Meare (Nos. 23-4) but also at Hod Hill and Hunsbury (Nos. 20-1), although not, as he claimed, at Bigbury, Hunmanby, Polden Hill and Trelvelgue, his argument again breaks down.

Fox (1945b: 30-2; 1947a: 37-8) argued that the two gang-chains from Llyn Cerrig Bach had been imported from east Anglia, close parallels having been found at Barton, Colchester and St. Albans. It seems to me that, so far, this is the only case of alleged importation

that cannot be faulted; however, whether or not the Llyn Cerrig chains were imported from east Anglia, it seems reasonable to argue that the design (if not the chains themselves) may well have originated there.

The currency bars were held to have been made in Dobunnic territory, "near to the Malvern Hills, of Forest of Dean iron. But the proof must await analysis by metallurgists of Dean ores, and of our bars" (C. Fox 1945b: 33). However, the distribution patterns of the two kinds of bars represented at Llyn Cerrig Bach (D.F. Allen 1967:

Fig. 2) renders this view improbable. Moreover, not only has Allen (Ibid.: 310) shown that no currency bar of any type has yet been found in the Forest of Dean, but Tylecote (1962: 209-10) has demonstrated that none of the four currency-bars so far analysed could have been made of Dean ore. Tylecote (Ibid.) also pointed out it is wrong to think

"that all early iron came from a few well-known deposits of high-grades .... iron is very widespread and there is no doubt at all that local deposits were worked where there were any. In very few counties in England at any rate, are iron deposits absent."

The fragment of a bronze trumpet was considered to have been imported from north-eastern Ireland, since two complete trumpets, probably (though not certainly) of the same type, have been found in Co. Armagh and Co. Down (C. Fox 1945b: 34-5). However, I doubt whether this distribution-pattern, represented after all by only three specimens, is significant enough to state with confidence that the Llyn Cerrig specimen was imported from Ireland.

For the form of No. 325, Fox (1945b: 36-7) could find no close

parallel; indeed, none has subsequently come to light. However, on stylistic grounds, he concluded (Ibid.: 37-8) that the piece was made "in the east Yorkshire - north Lincolnshire region". This was based on analogies with parts of the ornament on the end of the side-link of No. 161, on a (?)shield-disc from Grimthorpe (Ibid.: Fig. 17), and on the Bugthorpe scabbard (Piggott 1950: Fig. 2.5). Despite further elaboration of this argument at later dates (C. Fox 1947a: 48-50; 1947b; 1958: 33), and despite the fact that only details of the ornament can be paralleled in East Riding, Lincolnshire and elsewhere, except for the stylistically very similar, but unfortunately unprovenanced No. 488, Fox never wavered in his belief that No. 325 had been imported from eastern England.

Fox (1945b: 40-1) initially argued that the fragmentary Group III cauldron No. 427 had been imported from east Anglia, although he later (1947a: 43-4) considered that both it and No. 428 had been made "somewhere in southern England". However, I have indicated above (Chapter 23.4.) that the closest parallels are with three cauldrons from Scotland, two from Blackburn Mill, Berwickshire, and one from Skye. It is very doubtful whether a Scottish origin could be postulated for Nos. 427-8, or an Anglesey origin for the Scottish specimens. I see no reason to conclude other than that they may well all have been made in the neighbourhoods of their places of discovery.

The final pieces for which Fox (1945b: 41-3) postulated an origin outside Anglesey were the squares and strips of sheet bronze ornamented



in relief (Nos. 437-9); he considered them to have been imported from the Gloucester-Somerset region, despite his own admission that the closest parallel in pattern to Nos. 437-8 occurs in enamel on a Group IIA strap-union from Santon (No. 207). Nevertheless, No. 439 is closely matched on No. 433, from Ham Hill, although the simplicity of the ring-and-dot motifs employed on these strips is hardly a strong argument for deriving No. 439 from south-western England; if one were to postulate that Nos. 433 and 439 were made in the same area, it would be equally reasonable to argue that No. 433 was made in Anglesey.

Far from indicating that "Llyn Cerrig reveals, not a creative art centre of art or craftsmanship in Anglesey", as Fox (1945b: 45) concluded, the preceding discussion demonstrates clearly that the opposite view is more probable, namely that there was a creative industry on Anglesey, or, at least, somewhere else in northern Wales. The ornamental shield-boss mount (No. 308) reinforces, rather than, pace Fox (1945a; 1947a: 9-11, 53-8), contradicts this alternative explanation. The closest analogies to the form of the piece are, as I have argued (Chapter 17.3.2.), only to be found in northern Wales; as with No. 325, the stylistic arguments adduced to indicate an origin for No. 308 in England are not altogether convincing. Indeed, they were based to a large extent on the alleged proof that Anglesey was not a creative centre of art and craftsmanship. We can now state, although manifestly Fox could not twenty-five years ago, that Nos. 310 and 318 indicate that artistic work of a reasonable standard was executed in north Wales; it would be perverse, in view of

those two shields, to argue the contrary. In this light, what of Fox's argument that No. 308 was made in southern England. It is interesting to note, in passing, how Fox never could quite make up his mind as to where he thought it had been made: firstly, in the southern Midlands-Thames region (1945a: 214), later on, in Northamptonshire or Gloucestershire (1947a: 58), and, finally, a very vague statement which seems to imply the northern end of the "Jurassic Way" (1958: 43-4, 56). The initial statement was based on Fox's conclusion that the hatching on No. 308 was akin to his 'eastern basketry-style' (1945a: 206), on the alleged seminal role of the scrolls on the Bugthorpe scabbard for the terminal scrolls on the boss-mount (Ibid.: 208-9), and on the distribution of works whose designs Fox (Ibid.: 209-13) held to have influenced and have been influenced by No. 308's ornament. His later modification of the area in which No. 308 was alleged to have been made (1947a: 58) was not, however, accompanied by any new arguments or new pieces of evidence. Indeed, a decade later (1958: 43-4, 56) he gave no reason whatsoever for moving once more No. 308's alleged place of manufacture to yet another area. Just as with No. 325, no close parallel can be adduced for the totality of the pattern on No. 308. In view of this, and since it is striking not only that both pieces were found together, but also that they are so closely related stylistically, and that neither piece can be closely matched in form outside northern Wales, it seems far from unreasonable to consider that they might both well have been made in Anglesey itself. Moreover, in view of the fact that the preceding

discussion suggests strongly that hardly any of the other Llyn Cerrig artifacts can now be demonstrated to have been imported from England or Ireland, I can only conclude that the onus probandi that Nos. 308 and 325 were not made in northern Wales no longer rests here, there being strong evidence to suggest that a major workshop, or group of workshops, devoted to the production of fine bronze-work, existed in northern Wales in the late pre-Roman Iron Age.

### 32.3. Principles of analysis

As a result of the preceding section, it is now pertinent to consider on what basis one ought to set about the task of identifying the places at which, or, rather, the areas within which individual objects were made.

The first principle that needs to be established is that the relationship in form, style of ornamentation and/or technique of manufacture between any pair of objects must be very close indeed before one can begin to consider seriously whether or not they may have been made in the same workshop, or by the same craftsman, or in the same workshop-tradition. By this last term, I mean essentially both a series of closely related workshops in which craftsmen worked in similar ways, making objects according to very similar designs and by means of very similar techniques, and also a workshop or group of closely related workshops that existed over a long period and that had a distinctive 'stamp'. I use this term 'workshop-tradition' in much the same way as art-historians use the phrase 'school of so-and-so'. In order to be absolutely certain that a pair of objects was made in the same workshop or by the

same craftsman, one or more of the following conditions must be fulfilled: first, the same tool was used on both pieces, second, both were cast in the same mould, third, the same 'melt' of metal was used for both, fourth, both are unfinished products from a known workshop-site. Another condition might also be considered, namely, that the two objects were cast in moulds that had been invested around the same pattern, but the practice of making moulds by investing around old and much hallowed artifacts, well documented by Roman copies of Greek works of art (Richter 1950) - if not yet in Britain - means that this criterion cannot be accepted with confidence. The same proviso needs to be made concerning the use of moulds in the production of relief ornament, for they may well have continued to be used long after they were first made. I know of only one case in the southern British late pre-Roman Iron Age bronze-work for which a strong case can be made out for regarding objects found at different sites as products of the same workshop, namely, the Group VI terrets from Rickinghall and Stanton in Suffolk, Nos. 47-8 (cf. Chapter 2.2.6.). Megaw (in Megaw and Merrifield 1970: 157, n. 16) has claimed that Nos. 444-5 were produced on the same die; this, however, is impossible since the relief designs are of quite different size. It can hardly be said that the arguments advanced by C. Fox (1958) concerning workshop-attribution fulfil any of the criteria laid down above.

Nevertheless, one further criterion may be made; this concerns the localisation of areas within which workshops responsible for certain

artifacts may have been sited. If a group (however small) of closely related objects is confined to a relatively small area, then it seems reasonable to argue that the workshop, craftsman or - men that produced those objects were located within that area. It is, however, a fallacy to assume that objects were traded or otherwise transported over great distances, unless their points of origin can be conclusively proved, and/or unless it can be demonstrated that, though found far apart, they were nevertheless made in the same workshop. It is not enough to conclude that objects found far apart from each other may have been made by the same hand, for it can never be ruled out that it may have been the craftsman, rather than his products, that roved far and wide.

#### 32.4. Workshop-sites in southern Britain

We may, first of all, consider those sites which have yielded good evidence that bronze objects were produced on them.

Very few specifically bronzesmithing tools have been recognised on late pre-Roman Iron Age sites. Many of the small steel tools, e.g. gravers, must have rusted away or lie unrecognised in site collections (Spratling 1970a: 190; Lowery, Savage and Wilkins 1971: 168). I have argued elsewhere (Spratling 1970a: 190, Fig. 3; 1970b: 13-14, Fig. on p. 24) that a group of small bronze and iron implements from South Cadbury Castle were bronzesmiths' tools, but I am no longer confident that these identifications were correct; it may, however, be noted in passing that bronze tools similar to those from South Cadbury occur elsewhere in goldsmiths' workshop-finds (Ippel 1922: 19, 81-2, Taf. X;

Kunze 1959: 291). Attention may also be drawn to a goldsmith's bronze hammer, probably of immediately pre-Roman or of Roman date, from Rugby (Archaeol. J. 35 (1878): 301, Fig. ); however, I here reject my identification of a small bronze hammer-head in the Polden Hills hoard as a smith's tool (Spratling 1970a: 190, Fig. 4), owing to the unsatisfactory nature of the socket for secure attachment of a handle. Tools used in bronze-working have also been recorded at Bredon Hill, Glastonbury, Hod Hill, Meare, and in the Santon hoard (Spratling 1970b: 15-6), whilst crucibles have been recorded at several sites, notably Glastonbury, Hod Hill, Hunsbury, Llanmelin, Maiden Castle, Meare, Merthyr Mawr Warren, South Cadbury Castle, and Sutton Walls (Ibid.; Tylecote 1962: 130-41), although hardly any pre-Roman Iron Age specimens have been proved, by analysis of the slaggy glaze, to have been used in bronze-casting (cf. Tylecote 1962: Table 52). Industrial hearths and a tuyère have also been found at South Cadbury Castle (L. Alcock: pers. comm.). Another workshop has been located at St. Mawgan-in-Pyder where, incidentally, tin was smelted (Threipland 1957: 42-3, 76; Tylecote 1962: 65, Table 24). Tin-smelting furnaces have also been identified at Chun Castle (Leeds 1927: 216-8; Tylecote 1962: 63-5, Fig. 11).

Further finds suggest specific workshop-sites. Besides tools, the Santon hoard also contained newly repaired objects (No. 429; and a Roman jug: R.A. Smith 1909b: Pl. XVII. Nos. 2-3), much scrap metal (e.g. No. 419), new, unused objects (Nos. 138A, 206-7), and unfinished objects (e.g. Nos. 138B and 478D). It seems probable that the hoard was

found on or near the site of a workshop. The same appears to be true of the Ringstead hoard - for Nos. 159 and 200 are new pieces, and since a partially deformed slab of bronze was found with it (R.R. Clarke 1951b: 223, Pl. XIXb) - of the Seven Sisters hoard - which included a pair of ingots (J.R. Allen 1905: Fig. 21) - and of the finds of unfinished torcs from Ipswich (Owles 1969) and Snettisham (Burns 1971: 228, Fig. 2a).

Finds made by chance and in excavations indicate, therefore, that bronzesmiths' workshops were located in most parts of southern Britain. It is interesting that they are found not only in urban centres (e.g. Hod Hill and South Cadbury Castle) but also at small settlements (e.g. St. Mawgan-in-Pyder). It is unfortunate that so little is known of the contexts of so many of the hoards, although, since the precise locations of some (e.g. Ringstead and Santon) are known, intensive fieldwork might well yield valuable new information.

The known and probable workshop-sites have yielded precious little information concerning the kinds of objects that were made in them. However, some of them provide some very useful clues. For example, the presence of crucibles indicates that casting was carried out (as at Meare), whilst the hammers from Bredon Hill indicate sheet-metal-working. Alcock (1970: 20) has argued that the South Cadbury finds represented an armourer's workshop; they indicate that both iron and bronze were worked there. The Snettisham finds (R.R. Clarke 1954; Burns 1971) demonstrate that the workshop on Ken Hill specialised in

the production of bracelets and neckrings. The Santon hoard, however, suggests a much more varied routine, including sheet-working, casting, enamelling, and repair-work, of all sorts of objects. It might be argued that the absence of sheet metal from the Seven Sisters hoard signifies that it was a founder's collection, but, since the circumstances of discovery were hardly conducive to the recovery of sheet metal, such an argument would not be very convincing.

### 32.5. Type-distributions and the location of workshops

In Chapter 31.4, I drew attention to those types that are restricted to certain parts of southern Britain, and concluded that two principal 'style-zones' could be discerned. Each zone was made up of a series of overlapping distribution-patterns, many of which were restricted to relatively small tracts of southern Britain. In this section, I intend to consider the latter with a view to suggesting areas in which workshops may have been located.

At least one workshop was probably sited in the area of the Wash; this is suggested by the distribution of the ornamental motif consisting of three almond-shaped slugs placed end-to-end within an enclosing ridge (on Nos. 159, 267, 302 and 322). In view of the likely dates of the pieces on which this motif occurs, the workshop(s) probably existed in the second-first century B. C. These or other related workshops in Lincolnshire, east Riding, and/or Norfolk were presumably responsible for the majority of Group I bridle-bits of eastern English tradition and No. 285. It is interesting that several relatively early pieces from the



lower Thames valley (Nos. 158, 254, 271, 320-1) exhibit close links with the products of this area, suggesting that workshops in the London region may have been in closer contact with those of east Riding, Lincolnshire and Norfolk than with workshops elsewhere in southern Britain. But we must be cautious in assuming that a unified workshop-tradition or school of bronzesmiths was located in the London region in view of the heterogeneous collection of the finds from the lower reaches of the Thames, even though we can be reasonably certain that a school of dagger-smiths existed there in the earlier pre-Roman Iron Age (Jope 1961a).

However, it seems pointless to attempt to analyse the distribution-patterns of objects confined to eastern England that were current at the time of the Roman Conquest (Map 41), for it is unlikely that such a complex pattern of overlapping patterns could be satisfactorily disentangled. Suffice it to say that the area probably contained a fair number of workshops at this time; at least one, producing terrets (if no other kind of object), was located in the middle of northern Suffolk, as Nos. 47-8 strongly suggest (cf. Chapter 32.3),

Probably in the first century B.C., a series of linked workshops appears to have been set up in the tract of country running from Dorset and Somerset north-eastwards into Northamptonshire and, possibly, beyond into east Riding. Bearing in mind the differential discovery-patterns exhibited on Maps 38-9, Map 42 nevertheless seems to suggest that the workshops that made up this network were principally concentrated in southern Somerset and Dorset, in the upper Thames valley,

and in Northamptonshire.

Towards the end of the pre-Roman Iron Age, there appears to have been a marked south-westerly shift in the concentrations of bronzes, as I have remarked above (Chapter 31.4; cf. Map 42 with Map 43). The several distribution-patterns on Map 43 suggest that workshops were now also located in south Wales as well as in the whole of the south-western peninsula, Gloucestershire and, possibly, Northamptonshire. The map suggests that the primary centres were in southern Somerset and Dorset. This picture contrasts strongly with C. Fox's view (1958: passim) that the principal centres in south-western Britain were in the hands of the Dobunni. If any choice were to be made between the four principal tribes in the region - the Dumnonii, the Durotriges, the Dobunni and the Silures - it is the Durotriges who should now assume the mantle conferred by Fox on the Dobunni. But this is not to suggest that the Durotriges were responsible for many of the objects that Fox assigned to the Dobunni, often on the flimsiest evidence. For example, I see no reason for sustaining Fox's argument (1958: 104) that Nos. 336, 348, 351-4 and 358 were "made somewhere in Dobunnic territory, and traded to the south-west", nor for arguing with Fox (1958: 144) that Nos. 305, 376 and 378 should have been produced in Dobunnic workshops together with No. 335; the reasoning that led to the latter conclusion, in particular, can hardly be regarded as based on overwhelmingly good evidence.

#### 32.6. Aspects of the organisation of smiths and of the distribution of bronzes

Rowlands (1971) has recently assessed the ways in which prehistorians have

(and should) set about the task of interpreting the organisation of metal-work production in prehistoric times. In contrast to Bronze Age studies, very little attention has been paid to the organisation of smiths in the pre-Roman Iron Age. Fox (1958) argued that, whilst blacksmiths were probably very common, working in most parts of Britain, the producers of 'fine' metalwork (such as most of the pieces listed in my Catalogue) were concentrated in a very small number of workshops, and that their products were widely distributed, mostly by trade. This view has, however, been challenged within the last decade (Alcock 1963b: 28; Spratling 1970a: 191; 1970b: 16-17). Moreover, in the preceding sections of this chapter, I have argued that actual workshop-sites and restricted distribution-patterns indicate that a considerably larger number of workshops probably existed than was envisaged by Fox.

Following Alcock (1963b: 28), I have elsewhere (1970a: 191; 1970b: 17) argued that account must be taken of the possibility that at least some of the more skilled bronze- and gold-smiths may occasionally have moved about from one centre to another, although, in retrospect, I now consider that the concept of truly peripatetic bronze- and goldsmiths is probably out of place here (cf. Lowery, Savage and Wilkins 1971: 169; Rowlands 1971: 213-5). Nevertheless, the movement of at least master-smiths must be borne in mind when considering how innovations in design, style and technique were spread, although the role of patrons in the innovatory process must not be overlooked (cf. Burford 1972: 124 ff.). Movement of skilled craftsmen was common in the Classical world, especially when

in short supply and when the services of the very skilled were eagerly sought after (Burford 1972: 57-67), and it is probable that Roman gem-cutters and moneyers worked on the production of dies of many of the pre-Roman coin-issues in Britain (M. Henig: pers. comm.). In this connection, it may be recalled that Jope (1961b: 82; 1971a: 64) has argued that a smith trained on the Continent was involved in the production of No. 322. Moreover, it is probable that the continuing continental influences on southern British late pre-Roman Iron Age bronzes, detected above, may have been due as much to persistent contacts between British and continental smiths and workshops as to gift-exchange and trade. I can find no evidence, however, for supporting the widely-held contention that, at any stage in the later pre-Roman Iron Age, there was a distinct 'horizon' of innovations such as might have been caused by smiths having accompanied alleged migrations or invasions from the Continent (Hawkes 1968: 13-14); furthermore, the speciousness of Sandars' explanatory model of the origins of Insular la Tène art (Sandars 1968: 273-4) has been demonstrated by Clark (1970: 107).

In view of the high standard of workmanship exhibited by many southern British late pre-Roman Iron Age bronzes, it seems very likely that certain smiths may have specialised in certain techniques (cf. Chapter 18.1). If so, then we must envisage workshops with several specialists present, as having existed in order to have been able to produce those objects, such as swords and their scabbards, shields and tankards, which exhibit technical excellence in a wide variety of skills.

However, Rowlands (1971: 211) has shown that it is not necessarily the craftsmen who organise the total production of, say, a sword-blade, its hilt, and its scabbard, but sometimes the person for whom it is made: at Kerma (Nubia),

"the customer takes iron to a smith for a dagger to be made, then takes the blade to another craftsman for it to be hafted and to a third for a decorated sheath to be fitted".

This quotation raises two important issues, namely the source of the metals used in production, and the organisation of production; Rowlands (1971) has highlighted the wide variety of arrangements adopted by modern, small-scale societies. It is crucially important to distinguish between production organised by smiths on their own behalf and that organised by the customer, on a 'commission' basis. A brief consideration of the economic background in the southern British late pre-Roman Iron Age is necessary at this point.

Collis (1971a: 76-82; 1971b) has recently discussed the evidence for the development of a market economy in parts of southern Britain during the late pre-Roman Iron Age, and, on the basis of the distribution of bronze coinage, inferred the existence of both major and minor market-centres. Moreover, Hodder and Hassall (1971) have published a preliminary analysis of the market-system of central and southern England in the Roman period; Hodder (pers. comm.) has since been able to demonstrate that the origins of this market-system may be detected in the late pre-Roman Iron Age distributions of inscribed coins and ceramics.

However, whilst a primitive market-system, based at least in part

on money, was coming into existence during the late pre-Roman Iron Age in much of southern England, there is an equally large area of southern Britain in which it was not. Furthermore, whilst coinage was undoubtedly used, it can hardly be said that we know what kinds of goods could be purchased with it; in contrast to the Roman Empire, we have no documentation of how many bronze coins were equivalent to a gold stater, nor of how many coins were needed to purchase a cow, let alone a Battersea shield, or the services of an 'architect' to design the entrance-earthworks of a Maiden Castle. Indeed, we cannot really be sure that such things were obtainable on the open market, nor to what extent a truly merchant class had developed in south-eastern England by the time of the Claudian Invasion. It is, in fact, fallacious to assume (pace Collis) that, because bronze coins were widely used in pre-Roman oppida both on the Continent and in Britain, it necessarily follows that Late la Tène economies were as advanced as those of the Greco-Roman world. Moreover, the appearance of similar trinketry in places as far apart as Mont Beuvray and Stradonice (Collis 1971b: 100) does not necessarily imply that they were traded over great distances, for there is as yet no way of proving the place of manufacture of any piece of Late la Tène bronze-work. Furthermore, it is far from clear just how the Roman economic network articulated with those of independent Celtic Europe, as evidenced by amphorae and bronze wine-services, and by the items listed by Strabo as having been exported to the Roman Empire from pre-Claudian Britain; was it articulated by means of coinage, by barter, and/or gift-exchange?

It is clear that to state that market-economies were developing in pre-Roman Britain is a little simplistic, and that really we know all too little of the nature of socio-economic arrangements in southern Britain in the late pre-Roman Iron Age. It is thus doubtful whether recent work on this topic has brought us any nearer to being able to decide in whose hands the control of production of bronze-working lay.

One further point may be considered, the oft-repeated statement that, since the distributions of metal types are not concordant with those of other kinds of material culture, their production and distribution must, therefore, have been subject to different sets of controlling factors. Bradley (1971: 349-50) has suggested that such discordances may have been a direct effect of competitive commerce in which producers sought areas of potential monopoly. However, such an explanation is only appropriate in a fully developed market-economy, for in modern, small-scale societies such a system has never been documented in a non-market-orientated economy. It does not follow that the distributions of types directly match the distribution of workshop-products, for several workshops may well have produced objects of very similar design. Furthermore, in many of the alleged cases of discordant distributions, it has not been conclusively demonstrated that the types concerned were truly contemporary with one another. Again, it is doubtful whether most current classifications of ceramics and other objects are precise enough for one to make such categorical assertions with confidence.

### 33. Conclusions

In this final section I intend to do no more than outline the principal conclusions reached above, to suggest those lines of research that I think could most usefully be developed in future studies, and to indicate those tasks, that need to be undertaken to place the above study in better perspective. I have no intention of attempting to relate in detail the picture built up above to other aspects of southern British late pre-Roman Iron Age culture, since up-to-date detailed, critical studies of the latter, based on such corpora as my Catalogue, have yet to be produced. However, several of these are currently in preparation, such as those of M.W. Bishop and C. Saunders, University College, Cardiff, on the Durotriges and iron objects respectively; a useful body of evidence on the Upper Thames region has just been published (Harding 1972). It seems probable that by the end of this decade it will be possible to attempt a total re-assessment of the British late pre-Roman Iron Age.

In this thesis, I have first of all proposed new taxonomies for most of the classes of objects listed in the Catalogue, as well as rejected or modified others. I have also examined the functions, both probable and improbable, that have been claimed for these pieces, and have put forward alternative explanations for certain objects (e.g. Group VI bridle-bits).

In discussing the designs of the pieces, I have also considered the extent to which they exhibit foreign influences, from both continental la Tène cultures and the Roman Empire. It is striking that, although foreign



influences are very apparent in weapon- and vessel-designs, and occur to a lesser extent on objects such as mirrors and ornamental mounts and studs, there is almost no sign that continental cultures had any influence on the designs of objects, both presumed and alleged to have been connected with chariotry. This bears out in an interesting way Caesar's statement that chariotry had ceased to play a dominant rôle in Gaulish life and warfare by his days, for few of the pieces considered here (Nos. 1-250) are likely to have been made before the middle of the first century B. C. However, a great deal of further research is needed before we can assess the true extent of continental influences; in particular, an attempt ought to be made to pin down more precisely those areas from which the influences emanated, to determine which parts of the European mainland were the most influential on the British bronze industry.

I have also briefly assessed the techniques of manufacture exhibited by the bronzes, and have drawn attention to the principal technical innovations in bronze-working in the late pre-Roman Iron Age. However, whilst in detail those innovations do not amount to very much, the principal innovation is the scale and variety of production. Indeed, one of the most impressive features of the southern British late pre-Roman Iron Age is the number of innovations in both design and technique in almost every aspect of material culture. I shall not attempt an explanation for this, for fear of ensnaring myself in a series of circular arguments; for example, the introduction of coinage could be interpreted either as a means of articulating an economy that was 'opening up' and becoming

less locally-based, or as a stimulant to that process, or as both. It is, I feel, intellectually arrogant for archaeologists to claim that they have much to contribute to man's understanding of the causes of such phenomena, in view of the fact that prehistoric systems are only partially observable (Doran 1970: 291ff), and that biologists and ecologists have been hard pressed in their attempts to explain similar phenomena, observable today in their totality.

A great deal of further research is needed on the technology of the bronzes. Hardly any of them have had their alloys determined, while still less have been subjected to metallographic examination. Furthermore, much could be learnt from a systematic attempt to emulate ancient techniques; a fine start on this has been made by Lowery and Savage (Lowery, Savage and Wilkins 1971).

The basis for Later la Tène chronology both in Britain and on the Continent has been considered in some detail. It is clear that much less precision in dating the bronzes is possible than has previously been claimed. I have shown that the main development in the bronzes considered in this thesis probably took place in the first century B.C. and the first half of the first century A.D.; the beginnings of the bronze traditions detected probably occurred in the second, or, less certainly, in the third century B.C. Two of the principal conclusions of my analysis of continental chronology were that the Ticinese cemeteries are crucial to the dating of Late la Tène material culture and badly need an up-to-date critical study, and that the dating of Gallo-Belgic coinage in Gaul needs a detailed critical reassessment.

Lastly, on the basis of distribution-patterns and of known workshop-sites, I have isolated two principal style-zones, an 'eastern' and a 'western', in southern Britain, and have concluded that workshops were located in most parts of southern Britain. The detailed picture of the production of bronze-working in southern Britain built up by C. Fox (1958) has been refuted.

As I stated at the outset (Chapter 1.2), I have deliberately omitted from consideration here a stylistic analysis of the ornamentation of the bronzes. Although I remarked that a large number of studies has hitherto been devoted to this, the collection here of a large number of previously unpublished pieces and the demolition of many previously-held theories on various aspects of the bronzes mean that a major stylistic reassessment is now needed.