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THE FIRST LATE BRONZE AGE FOUNDER'S HOARD FROM GORLESTON, GREAT YARMOUTH, NORFOLK

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SUMMARY

A late Bronze Age founder's hoard, one of the largest to have come from East Anglia, was discovered in 1952 at what at the time of deposit was the gathering ground of a small stream. The relationship of the findspot to the original coastline and to early settlement in the area is examined. An inventory and illustrations of the material are provided. The contents of the hoard, mainly axes but also including spearheads, swords and a rare looped guide-ring, are discussed in relation to other finds from East Anglia and further afield. The hoard occupies an intermediate position between the traditional Wilburton industry and the Carp's tongue phase, and it is dated to the seventh century B.C.

I - THE EXCAVATION AND THE SITE

The summer of 1952 saw the erection of the new Peterhouse Junior School at Gorleston for the Great Yarmouth Education Authority. On October 6th a trench was dug in the grounds for a sewer leading from the school to the town sewer under the road, and at one point a number of patinated bronze objects fell from the side of the trench. Here there was a cavity from which the workmen removed many more bronze objects.

The Schools Architect, Mr. F. Jackson, and his assistant, Mr. M. Richards, immediately consulted the writer (C.G.) who was excavating at Caister-on-Sea, and the site was at once visited. Because of the sandy subsoil, the sewer trench had been dug in two parts, first a V-shaped excavation and secondly, at its base, a narrower vertical-sided trough with its bottom some 6 feet (2 metres) deep. It was apparent that the V-shaped trench had just shaved away one side of the cache of a bronze-smith's hoard (Gorleston hoard I), and the section revealed was full of interest. However, as further work could not be done at the time, three pegs parallel to the trench were placed so that the precise position of the cache could later be determined and work then continued on the laying of the sewer pipe.

On Sunday 9th November 1952 opportunity offered for a one-day excavation. Mr. G. Pegg, at that time an assistant schools architect, Messrs. G. Bacon, G. Leach and D. E. Pitchers, all volunteers from the writer's professional digging team, together with the writer and his son, completed the examination of the site.

The sewer-trench lay roughly on an east-west line, and a trench was cut at right-angles to this, with its south end penetrating the top filling of the sewer trench by some 18 inches (40 cm). It was so sited that its west-side section would bisect the now empty hollow of the cache (fig. 2). As the sewer pipe lay well below the level of the hoard, no difficulty arose from its presence.

The top layer was the surplus filling of the sewer trench, spread over the surface, and in this were found a socketed axe fragment and part of a sword blade. Below was the original dark ploughsoil, virtually archaeologically sterile, and this

in turn capped a 2-foot (60 cm) thick bed of brown silty sand with a line of scattered small pebbles at its base, clearly a water-deposited bed. From this silt came a few sherds of manganese-glazed pottery of the 17th century A.D. and some fragments of brick. The south end of this silt-layer showed the outline of the bronze-smith's excavation for his hoard, and this was chamfered away on the south side by the sewer trench. The upper part of the hoard cavity was still filled by the mixed clay-earth 'plug' which had been rammed down solidly over the now-removed cluster of bronzes. The shape of the cavity suggests that this mass of metal must have been contained in a bag when it was deposited. So great a weight of metal could hardly have been held by one of woven fabric, and it is probable that it was in a leather bag or perhaps a rawhide skin. No trace remained of this, but the shape of the 'plug' and the overlapping silt point to the smith's having scooped out a rough hole in the silt and then thrusting this limp bundle into it. The weight of the metal would then spread into the surrounding silt, and the packing down of the plug would accentuate this spread further, so that its shape would survive as it was found.

The whole length of the silt-layer rested on fine soft fawn sand some six inches deep, below which was similar sand cemented into a 'hard-pan' by a deposit of iron oxide. This had formed an impenetrable floor beneath the hoard, and above it lay a socketed axe and part of a palstave.

After the section had been recorded, the trench was extended laterally at its south end to expose the remainder of the cache area (fig. 1). From the underlying soft sand came five socketed axes, a sword-blade fragment, the looped guide-ring and two ingots; some of these were resting on the hard-pan. Altogether the remains of about 90 different implements were found, as well as jets and ingot fragments. In addition, an axe (110) which was later acquired by Norwich Castle Museum (accession no. 49.961) and which has been attributed to the hoard appears to have been withheld at the time of the original discovery, and another (111) came to Great Yarmouth Museum (accession no. 294.956).

A second trench was then dug at an angle of 45° to the line of the first, a few feet to the west (fig. 1). As discussed below, this was cut to test a tentative hypothesis on the formation of these deposits. The brown silty sand again underlay the topsoil, but its base, marked by a thin seam of small pebbles resting on the fine sand, was a few inches higher than in the first trench and sloped slightly down towards the south-east. In this brown silt were a few small sherds of eighteenth-century saltglaze pottery and sundry sherds of seventeenth/eighteenth century glazed wares, as well as a few fragments of brick.

The precise site of the hoard (TG 51940367) lies between the school and the entrance gate to the west (fig. 1, inset 3). Today the area is asphalt covered, but the line of the sewer, is marked by the covers of inspection pits. The school stands on the crest of the ridge of higher land which runs from Gorleston to Lowestoft close to the Lothingland coast. To the west the surface is dissected by several small shallow valleys and, in general, it slopes gently down towards the river Waveney (fig. 1, inset 1). The subsoil is an accumulation of outwash sands and gravels resting on the Chalky Jurassic Boulder Clay of the Lowestoft glaciation. The brown silty sand was a later deposit in what appeared to be the bed of a small pool. The contours confirm this (fig. 1, inset 2), and show that the site must have been the headwaters of a stream which formerly had run to the west. Today, the lower course of this is represented by the artificially straightened dyke which runs from a point on the Bradwell/Burgh Castle boundary near Old

Hall Farm down through Belton Fen to the Waveney. Its present head is rather more than a mile (1.6 km) to the west of the hoard's findspot.

There can be no doubt that this shallow valley was carved out by naturally flowing water, and, before the introduction of modern artificial drainage, this stream must have run along the whole length of the channel. This is supported by the finding of fragments of brick and pottery in the silt. They point to the dampness of the site at least as late as the first half of the eighteenth century A.D.; following heavy rains it may well have been covered by shallow pools. This is further supported by the surface levels. Though the site lies just within (i.e. above) the 50-foot contour on the O.S. maps, the surveyor for the school had determined the surface at this spot as about 49.50 ft (15.1 m.) O.D. Newlyn, suggesting that there was still a slight hollow along this line.

In Bronze Age times this area must have been the gathering ground of the stream. As the extension to the first trench showed a slight downward slope of the base of the silt towards the west, the second trench was designed to expose the central channel of the small system, but the levels and slight slopes recorded in both trenches point to this main channel as lying between the two.

Since Bronze Age days, the erosion of the Lothingland coast has to some extent obscured earlier conditions. On the eastern side of the spinal ridge, particularly in its northern half, there are the heads of several small valleys which must have been at least two or three miles (3 to 5 km) long in the first millennium B.C. There is indeed some historical evidence to support this. In A.D. 1567 solid piers were installed at the artificial entrance to the Yarmouth Haven, an entrance cut in 1560 across the Spit. These were designed to ensure that the tidal scour would keep open the entrance channel. In consequence the main tidal current, which runs south during the flood, was deflected and swung in south of the piers. It first removed the southern end of the Spit which had accumulated during the Saxo-Norman marine regression. When this had gone, the erosion of the boulder clay cliffs which had formerly been protected by the Spit soon followed. Two centuries later, the parish of Newton which lay here had virtually disappeared and only a tiny strip along its western boundary, which now forms a part of Corton, remains today to the east of Hopton.

From the heads of these valleys have come a surprisingly large number of Neolithic-type flint axes and small implements (Green & Hutchinson 1960, fig. 1; more have since been found). In Neolithic and Early Bronze Age times there was certainly a relatively dense population in this area, and, though there is less evidence of this for the Middle Bronze Age, that for the first half of the first millennium B.C. is more satisfactory.

At Somerleyton, a few miles to the south-west, a small hoard of the Late Bronze Age, which included parts of two winged axes, was found in 1926 (Anon. 1928; the hoard is now in the British Museum). More recently, another small hoard has been found at Gorleston (hoard II), not far from the site of the one here described (Norwich Castle Museum records). The exact findspot of the later hoard, revealed 'a few years' before 1966, is not known, but it is given as 'behind the Magdalen Arms', where now stands a small group of council houses between the public house and the railway, some 750 yards to the north-north-east of the first hoard. This site (TG 520043) is on or just within the same 50-foot contour which encircles the school, but nothing is known of the immediate sub-soil conditions and the contour shapes suggest that it lay in a different drainage

system. This second hoard was not reported at the time of its finding, and the original components are not exactly known. Four socketed axes, two broken spearheads, two fragments of leaf-shaped sword and a jet are now in the Birmingham City Museum and Art Gallery, and two socketed axes are known to have remained in private possession (C.B.A. Group VII 1966). There may also have been two other spearheads, and there are suggestions that still more of the hoard may not have been revealed by its finders.

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C. G.

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II – INVENTORY OF THE HOARD

The implements are grouped here according to type and arranged as far as possible in numerical order. The numbering published in *Bronze Age Metalwork in Norwich Castle Museum* (1966, 2nd ed. 1977), although not always convenient, is retained. The hoard was placed on loan to Norwich Castle Museum in 1953 (accession no. 152.953) and at the time of writing is displayed at the Gorleston Branch Library; one socketed axe attributed to the hoard (110, NCM 49.961) entered the collections at a later date, and one was acquired by Great Yarmouth Museum (111, GY 294.956).

Abbreviations: H. = Height; L. = Length; SL. = Surviving Length; Wt = Weight.

DECORATED SOCKETED AXES OF SUB-RECTANGULAR SECTION WITH SINGLE LOOP (fig. 3)

1. Heavy double mouth moulding, lower moulding level with top of loop; decorated with four ribs on each face including one on each corner; sharpened. L. 95 mm.
2. Similar to 1, but with three short ribs on each face; two internal ridges; casting flaws on each side; cutting edge sharpened, splayed and damaged. L. 98 mm.
3. Similar to 1, but with pronounced ribs on each corner and three very faint irregular ribs between on each face; cutting edge sharpened, splayed and damaged. L. 103 mm.
4. Similar to 1, but smaller, with three widely spaced faint ribs on each face; sharpened. L. 81 mm.
5. Upper part of axe similar to 1, but with five ribs on each face including one on each corner, every rib ending in a pellet; two internal ridges; mouth incompletely formed; cracked on one face. SL. 58 mm.
6. Upper part of another, similar to 1, but with four short ribs on each face, every rib ending in a pellet; two internal ridges. SL. 75 mm.
9. Similar to 1, no ribs on either face but with each corner emphasised by a rib with a groove on its inner side; two internal ridges; casting flaw on one face; sharpened. L. 113 mm.



Fig. 3
Decorated socketed axes. Scale $\frac{1}{3}$

10. Very similar to 9, but ribs less pronounced; loop and part of mouth missing; sharpened. L. 105 mm.
11. Similar to 1, but rectangular in section, and decorated with eight ribs on one face and nine on the other, including one on each corner; mouth poorly cast and partly missing; sharpened. L. 112 mm.

16. Upper part of axe similar to 9, but corner ribs very faint; mouth poorly cast; one internal ridge. SL. 66 mm.
35. Fragment of axe with single mouth moulding; decorated with a corner rib and at least two others, each headed by a pellet; one internal ridge survives. SL. 33 mm.
40. Mouth fragment of axe similar to 1, decorated with at least three ribs on surviving side. SL. 40 mm.
44. Cutting edge of socketed axe, sharpened and splayed; decorated on at least one side with two or more close-set ribs ending in pellets. SL. 64 mm.
62. Body fragment; corner emphasised by rib. SL. 31 mm.
- 63a. Very small body fragment; one decorative rib appears. SL. 24 mm. Not illustrated.
64. Mouth fragment; perhaps one very faint rib appears. SL. 33 mm.
67. Upper part of axe similar to 9, with rib and groove on each corner, but with single mouth moulding; two internal ridges. SL. 75 mm.
69. Cutting edge; possibly decorated like 9 (cf. 16); sharpened. SL. 72 mm.

PLAIN SOCKETED AXES OF SUB-RECTANGULAR SECTION WITH SINGLE LOOP, AND UNDECORATED FRAGMENTS (fig. 4)

12. Heavy double mouth moulding (lower moulding level with top of loop); cutting edge sharpened, splayed and damaged. L. 106 mm.
13. Similar to 12; two internal ridges; sharpened. L. 110 mm.
14. Similar to 12; mouth poorly trimmed; sharpened. L. 94 mm.
17. Upper part of another; two internal ridges. SL. 79 mm.
18. Similar to 12; two internal ridges; cutting edge sharpened and damaged. L. 100 mm.
23. Similar to 12 but smaller; cutting edge sharpened, widely splayed and damaged. L. 86 mm.
25. Upper part of another; mouth cracked and bent. SL. 77 mm.
26. Similar to 12 but smaller; mouth cracked and broken; cutting edge damaged. L. 80 mm.
27. Similar to 12, in two joining parts (a/b); two internal ridges; cutting edge sharpened and damaged. L. 111 mm.
28. Upper part of another; mouth and loop poorly cast. SL. 67 mm.
29. Upper part of another; two internal ridges. SL. 57 mm.
30. Part of another, loop side only; lump of scrap metal jammed inside. SL. 77 mm.
32. Mouth fragment, with loop. SL. 41 mm.
33. Another; one internal ridge appears. SL. 48 mm.
34. Another, with loop. SL. 50 mm.
36. Another, with loop. SL. 54 mm.
37. Another. SL. 41 mm.
38. Another. SL. 29 mm.
39. Another, flattened and cracked. SL. 55 mm.
41. Cutting edge cracked; one internal ridge appears; sharpened. SL. 58 mm.



Fig. 4

Plain socketed axes and undecorated fragments. Scale $\frac{1}{3}$

45. Another, unsharpened. SL. 54 mm.
46. Another, badly damaged but perhaps unsharpened. SL. 55 mm.
47. Body fragment; one internal ridge appears; hammered facet about 1-2 mm wide on two surviving corners. SL. 44 mm.
50. Cutting edge; two internal ridges appear; sharpened. SL. 57 mm.
52. Another, sharpened and splayed. SL. 32 mm.
53. Another, damaged but perhaps unsharpened; thick-walled socket formed with pointed core. Described as palstave fragment in *BAMNCM* (1977, 37). SL. 47 mm.
54. Another, sharpened. SL. 48 mm.
55. Another, sharpened. SL. 47 mm.
56. Another, probably sharpened; cast with core out of alignment. SL. 43 mm.
57. Another, sharpened. SL. 30 mm.
61. Part of another, much damaged. SL. 35 mm.
- 63b. Minute body fragment. SL. 26 mm. Not illustrated.
65. Complete axe, similar to 12; two internal ridges; sharpened. L. 96 mm.
66. Small axe with single mouth moulding; two internal ridges. L. 79 mm.
70. Body fragment. SL. 55 mm.
111. Complete axe, similar to 12; two internal ridges; sharpened; slight flaw on one face. L. 105 mm. Great Yarmouth Museum 294.956.

FACETED SOCKETED AXES WITH SINGLE LOOP (fig. 5)

7. Mouth of octagonal faceted axe similar to 15; small loop; two internal ridges; cast in a very light metal; corners emphasised by fine ribs. SL. 46 mm.
8. Mouth of another, with very deep collar ending in slender double mouth moulding, delicate loop below; cracked and broken by hammering. SL. 47 mm.
15. Octagonal faceted axe with double mouth-moulding forming short collar; loop only partly formed; two internal ridges; cutting edge missing; side flashings roughly trimmed. SL. 84 mm.
19. Similar to 15; loop noticeably ridged; two internal ridges; mouth poorly cast; cracked on one face; possibly sharpened. SL. 105 mm.
20. Small octagonal faceted axe with smooth deep collar, loop below; two internal ridges; sharpened. L. 80 mm.
21. Similar to 15; ridged loop; two internal ridges; cutting edge sharpened and damaged. L. 94 mm.
22. Similar to 20, but larger and with only faint traces of base of collar; poorly trimmed but sharpened. L. 92 mm.
24. Similar to 15; ridged loop; cutting edge widely splayed but mostly missing; corners mostly emphasised by ribs. SL. 85 mm.
31. Mouth fragment from faceted axe, probably hexagonal rather than octagonal, with triple mouth moulding; two internal ridges; facets possibly emphasised by ribs; loop missing. SL. 37 mm.
42. Body fragment of faceted axe, probably octagonal; distorted by hammering. SL. 37 mm.



Fig. 5
Faceted socketed axes. Scale $\frac{1}{3}$

43. Cutting edge of octagonal faceted axe; sharpened, but edge perhaps badly cast. SL. 44 mm.
48. Another, sharpened. SL. 26 mm.
49. Another, sharpened. SL. 46 mm.
51. Hexagonal faceted axe, mouth and loop missing; sharpened. SL. 81 mm.
- 58& Two joining parts of axe similar to 15; ridged loop; cutting edge sharpened; 68. broken by hammering. L. 100 mm.
59. Cutting edge of octagonal faceted axe; sharpened; almost flattened by hammering. SL. 43 mm.
60. Another, sharpened; broken and pierced by hammer. SL. 48 mm.
110. Octagonal faceted axe with single mouth moulding; two internal ridges; loop-hole made after casting; cutting edge sharpened and damaged. L. 99 mm. NCM 49.961.

SWORD AND RAPIER FRAGMENTS (fig. 6)

71a/ Three joining fragments of leaf-shaped sword; broken in antiquity, with b/c. hilt re-cast on to the blade; unfinished or rough mend; two rivet-holes in tang

and one in each shoulder; marked ricasso; blade edges bevelled. SL. 214 mm. *BAMNCM* fig. 45A.

71d. Tip of rapier blade with broad central rib; one edge damaged. SL. 88 mm.

72. Part of sword hilt; two rivet-holes, one complete and one fragmentary, survive on each side; one of the complete holes is plugged by a rivet. SL. 23 mm.

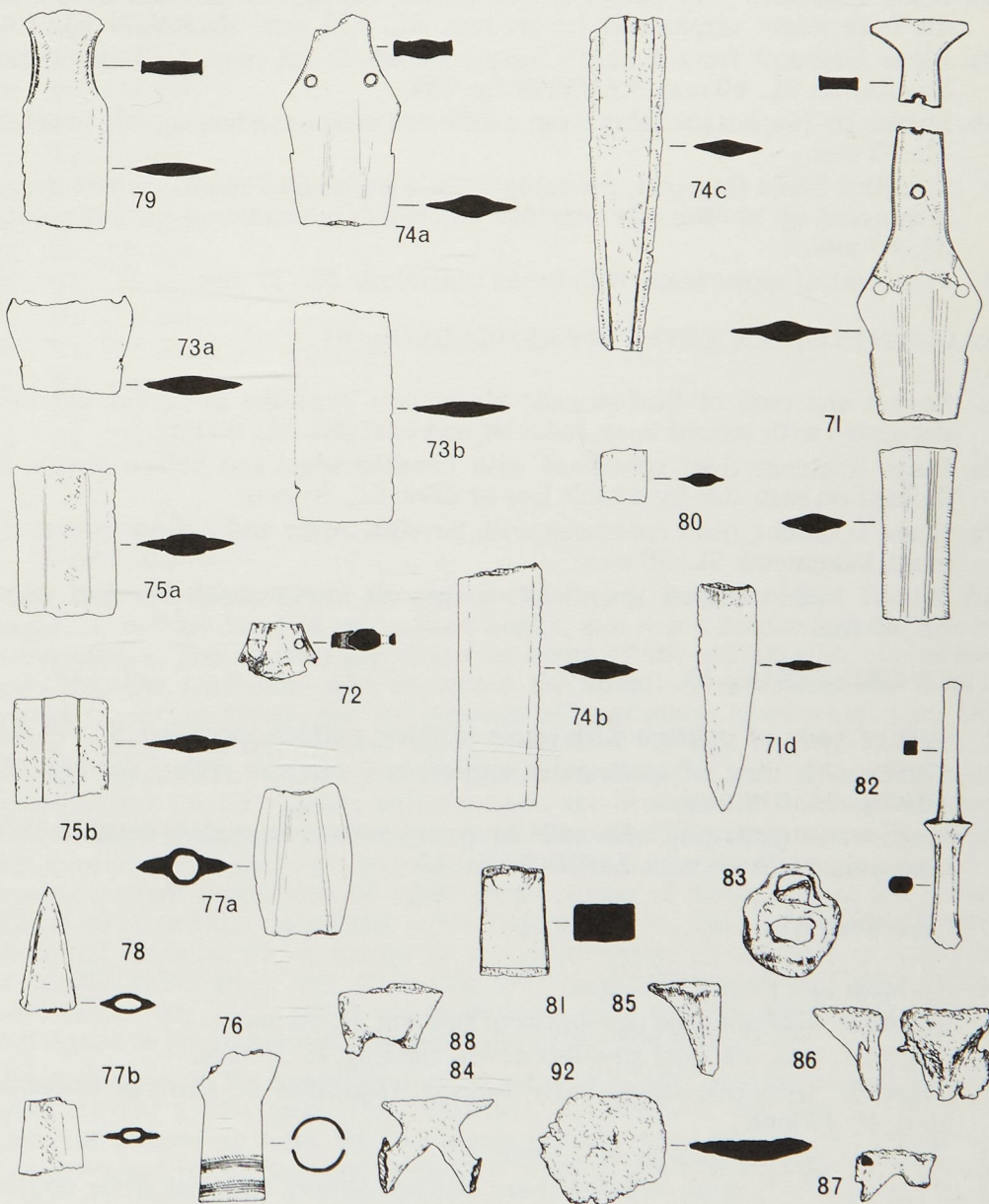


Fig. 6
Sword and spearhead fragments, miscellaneous objects, and casting jets.
Scale $\frac{1}{3}$

- 73a. Fragment of leaf-shaped sword; ricasso and part of one rivet-hole survive on each side. SL. 39 mm.
- 73b. Blade fragment from another sword, with bevelled edges. SL. 86 mm.
- 74a. Fragment of another; ricasso with marked notch and one rivet-hole survive on each side; flanged hilt. SL. 82 mm.
- 74b. Blade fragment from another. SL. 95 mm.
- 74c. Blade fragment from Carp's tongue sword; central rib and feathered bevel on both edges emphasised by grooves. SL. 132 mm. *BAMNCM* fig. 45C.
- 75a. Blade fragment from a Carp's tongue sword; broad central rib emphasised by grooves. SL. 60 mm. *BAMNCM* fig. 45B.
- 75b. Similar to 75a, but probably from a different weapon; edges slightly bevelled. SL. 42 mm.
- 79. Modified blade fragment, probably from a leaf-shaped sword; curved flanges hammered up at each side near one end which is hammered flat and curved. SL. 87 mm.
- 80. Fragment of rapier blade with broad central rib. SL. 21 mm.

FRAGMENTS OF SOCKETED SPEARHEADS (fig. 6)

- 76. Socket and base of (leaf-shaped) blade; two peg-holes in socket; carefully decorated with incised lines, hatching and triangles. SL. 60 mm.
- 77a. Blade fragment from spearhead with bevelled edges and hollow central rib defined on each side by double line or fillet. SL. 59 mm.
- 77b. Blade fragment from spearhead with bevelled edges and hollow central rib, much hammered. SL. 30 mm.
- 78. Tip of hollow-bladed spearhead of lozenge section with bevelled edges. SL. 49 mm.

OTHER OBJECTS (fig. 6)

- 81. Part of body of palstave with traces of shield pattern appearing. SL. 44 mm.
- 82. Chisel with tang of rectangular section and circular collar; cutting edge missing. SL. 114 mm.
- 83. Hollow-cast guide-ring with solid loop, broken and crumpled; presumed clay core missing. H. 44 mm. *BAMNCM* fig. 12.

JETS, &c. (Fig. 6)

- 84. Jet with two risers. H. 37 mm.
- 85. Another, with one riser and traces of flashing. H. 36 mm.
- 86. Another, with one riser and untrimmed flashing. H. 36 mm.
- 87. Another, with two risers, badly formed; fragments of charcoal embedded in it. H. 20 mm.
- 88. Another, with two risers. H. 27 mm.
- 92. Thin piece of metal, without risers, perhaps simply splashed while pouring. 8 mm. thick.

INGOT AND METAL FRAGMENTS (not illustrated)

- 89. Wt. 732 gm.
- 90. Wt. 92 gm.
- 91. Wt. 99 gm.
- 93. Wt. 188 gm.
- 94. Wt. 116 gm.
- 95. Wt. 319 gm.
- 96. Wt. 93 gm.
- 97. Wt. 172 gm.
- 98. Wt. 476 gm.
- 99. Wt. 449 gm.
- 100. Wt. 724 gm.
- 101. Wt. 120 gm.
- 102. Wt. 26 gm.
- 103. Wt. 275 gm.
- 104. Wt. 90 gm.
- 105. Wt. 150 gm.
- 106. Wt. 505 gm.
- 107. Wt. 76 gm.
- 108. Wt. 45 gm.
- 109. Wt. 24 gm.

III – DISCUSSION

The first Gorleston hoard is one of the largest hoards of late Bronze Age metalwork to have been found in East Anglia, and it is a bronze-founder's hoard *par excellence*. The fragmentary nature of many of the objects which it contains shows that the tradesman who deposited the hoard will have acquired them as scrap or in part exchange, and the presence of ingot metal, besides indicating that he was a practising smith, once again emphasises the fact that East Anglia, in common with most of south-eastern England, was devoid of natural metal resources and depended for its supplies entirely upon the activities of such men (Burgess 1974, 210). Like so many other hoards of the period from this region, it consists very largely of complete or fragmentary socketed axes; but like them again it contains a small proportion of other types. A few of these, such as the broken palstave (81) and the occasional rapier fragment (71d, 80), are inherited from a substantial tradition whose origins lie in a much earlier phase; some of them, like the tanged chisel (82), the guide-ring (83) or the fragments of Carp's tongue sword (74c, 75a, 75b), stand out as evidence of new ways which were to bring fresh vigour to the metal-working industries of the late Bronze Age.

The contents of the hoard help to throw a little light on bronze-working techniques current at the time. They illustrate, for example, the way in which the smith has broken up both the raw ingots and the scrap objects into pieces of a size convenient for melting and re-casting. Some of these broken pieces, especially if they are untrimmed or unsharpened, may be the remains of his own faulty castings. Because some of the fragments are so small, it must remain uncertain exactly what type of axe or sword they represent or what decoration, if any, they carried. It is possible to see that very many of the socketed axes have been broken

up by sharp blows from a punch or small hammer at their weakest point, just above the bottom of the socket; the marks of these blows are plainly visible, and in one instance (60) it will be observed that the hammer-head went right through one face of the axe. The type of hammer used is already known from examples in other Norfolk hoards like those from Aylsham (Clough 1971, fig.17; *BAMNCM* 1977, fig. 106) and Carleton Rode (*BAMNCM* 1977, pl. VI. 16), and although they are not perhaps very common they certainly have a wide distribution in other parts of the British Isles.

There is some variety in the range of *decorated socketed axes* (fig. 3) found in Gorleston I. The dominant form here is one on which the faces are plain but the corners are demarcated by ribs which are often emphasised by adjacent grooves (9, 10, 16, 67 and perhaps 62 and 69). There is an excellent parallel in the Carleton Rode hoard (*BAMNCM* 1977, pl. V. A1), and its distribution is not restricted to East Anglia – a similar axe is present in the Ketton, Rutland, hoard (Rutland County Museum). Other axes in Gorleston I which share this feature are also decorated with varying numbers of ribs on their faces (1, 3, 11). It is a type which does not seem to have attracted particular study, and whose distribution and associations merit further investigation.

Several axes in the hoard are decorated with ribs which begin (35), or more usually end (5, 6, 44), in pellets. The style is found, for example, in the Carleton Rode and Eaton (Norwich) hoards and on an axe from Frettenham, Norfolk (*BAMNCM* 1977, respectively pl. V. A3, fig. 63 and fig. 57).

One axe (4) is of the 'Yorkshire' type, a smallish axe decorated with three widely spaced ribs. The type has been found in East Anglia from time to time, but never in any quantity except in the North Elmham and Foulsham hoards (Clough & Wade-Martins 1970, 15 and fig. 3), and it is thus something of an intruder here.

Virtually all the *plain socketed axes* in the hoard (fig. 4) are of the mature south-eastern English type which is distinguished by its sub-rectangular section and marked double mouth moulding. This type is known from many finds to occur very frequently in conjunction with Carp's tongue material (Burgess 1968, 39, fig. 13.5). The collections of Norwich Castle Museum show that Norfolk is rich in south-eastern axes (e.g. *BAMNCM* 1977, pl. V.8, Carleton Rode hoard; fig. 39, Eaton (Norwich) hoard; fig. 93, two-piece bronze mould, Unthank Road (Norwich) hoard; fig. 102, Aylsham hoard). The presence of many other specimens, for example in a hoard from the Felixstowe railway cutting (Burgess, Coombs and Davies 1972, fig. 9.1-2), confirms that they occur throughout the region. Of the plain axes one somewhat squashed specimen (66) has virtually a single mouth-moulding; in this respect, and in its size, it resembles an axe in the North Elmham hoard (Clough and Wade-Martins 1970, fig. 2.10). With the plain axes are listed and illustrated all the undecorated fragments, although some of the cutting edges may in fact come from decorated axes whose upper portions have not survived. One heavy cutting edge (53) which is described in *BAMNCM* (1977, 37) as part of a palstave would be identified as such here were it not for the visible remains of a socket.

The *faceted socketed axe* is also regularly found in hoards which contain some aspect of the Carp's tongue industry (Burgess 1968, 39), and it is present in sufficient quantity to be a significant component of Gorleston I (fig. 5). Most are of the octagonal type which was discussed briefly by Butler (1963, 86-9), who considered that those without collars or mouth mouldings represented the

continental form which served as the inspiration for British faceted axes. Only one of the Gorleston I pieces (110) has no collar and no pronounced mouth moulding; the form is uncommon here, but it is known, for example, from the Eaton (Norwich) hoard (*BAMNCM* fig. 62) and from an unprovenanced Lincolnshire hoard (Davey 1973, fig. 37.355). In southern and eastern English hoards it is more usual to find the long and slender octagonal form with a collar, and this is the case with Gorleston I. Two of the Gorleston I examples (20, 22) have the deep, straight collar which occurs in other East Anglian contexts such as the North Elmham hoard (Clough and Wade-Martins 1970, fig. 3.27-8), and which Butler particularly isolated as an English development. However, most of the other identifiable axes in Gorleston I (15 and similar pieces), although similar in other respects, have short, stepped collars which call to mind parallels in the Eaton (Norwich) hoard (*BAMNCM* fig. 64) or from further afield (e.g. Burgess, Coombs and Davies 1972, fig. 17.40, from the Yattendon, Berkshire, hoard). Some of them, whose facets are emphasised by slight ribs on the corners (such as 7 and 24), probably owe this feature to a mould-making technique rather than to any conscious considerations of design or fashion. In this respect they seem to differ from the group of corner-ribbed sub-rectangular axes (9 &c.) isolated above. The upper part of one axe (8) is unusual in having an exceptionally tall collar, a tiny loop, and a clearly marked complex moulding above the loop.

One faceted axe (51) belongs to the rare hexagonal variety, but its upper part is missing; only one other distorted fragment (31) is likely to be part of a hexagonal axe. The remaining fragments of faceted axes, mostly cutting edges, are too undistinguished to attract individual comment.

Many hoards contain objects whose purpose is now unknown. Gorleston I contains one such piece, the sadly crumpled *looped guide-ring* (83), which is one of only a few known examples of its type. They are remarkable for their strikingly uniform appearance, in spite of their extremely sparse distribution. The only examples which can be cited in addition to the Gorleston piece are found in the hoards from Welby (Leicestershire), Horsehope (Peebleshire), Parc-y-Meirch (Denbighshire) and Vénat, St-Yrieux (Charente), and as stray finds from Grange-over-Sands (Lancashire, now Cumbria) and Woolpit (Suffolk). Sheppard, in his account of the Parc-y-Meirch hoard (Sheppard 1941), noted that the core of the rings found there was of lead. The stray find from Grange-over-Sands, whose core has been described as of dark grey clay (Clough 1972), has since been re-examined, and the report now available, by Mr. A. C. Bushnell, Lancashire County Analyst, through the courtesy of Lancaster Museum, indicates that the core of that piece is in fact made of sand. Thus in spite of the uniform appearance of these pieces, there seems to have been some variation in their technique of manufacture, and a detailed technical analysis of all the known pieces is clearly desirable. Unfortunately the Gorleston piece is so broken that no core appears to remain.

In a more recent account of the Parc-y-Meirch hoard (which has also been referred to as the Abergele hoard), Savory, like Sheppard before him, points out that the guide-ring is not complete without an enclosing outer ring with a slot into which the cast loop fits and which could take a strap or thong (Savory 1975, 1976). Parc-y-Meirch includes three looped guide-rings (one each in the Hull, St. Asaph Cathedral and National Museum of Wales collections) and four of the outer slotted rings (two each in the Hull and National Museum of Wales collections); they are best illustrated by Sheppard (1941, pl. IIa and VIb; see also Savory 1975, 120 and fig. 4; Savory 1976, 45, 52-3 and fig. 9). The evidence of

Parc-y-Meirch, where there were probably once four guide-rings to match the four slotted rings, and of Woolpit, where two guide-rings were found together (but without matching slotted rings), implies that they were used in pairs. Some at least of the single finds, like the Grange-over-Sands piece, are certain to be genuine accidental losses.

The associations of these rings in the various hoards cited above show clearly that they are part of a set of horse-furniture, a group of material which is not yet fully understood, but in which Savory sees a tangible reflection of some foreign element in the population of Britain in the seventh century B.C. He suggests that the various horse-fittings found in these hoards were probably made in Britain, although their associations show that they are derived from the late Urnfield cultures of the continent by way of the Carp's tongue complex (so named after its characteristic sword type) of western France. However, in view of the small numbers so far known of most of the types involved, both here and abroad, we should not discount the possibility that they were made on the continent; if so, they might even be more direct indicators of some campaign of exploration or diplomacy than Savory had envisaged. The Vénat guide-ring will undoubtedly prove to be important in the eventual interpretation of these pieces, but while it remains the sole recorded continental instance (as it seems to be at present) its place remains uncertain.

Although an origin in a preceding phase is likely (compare an example in the Wallington hoard — Burgess 1968, fig. 11.4), *tanged collared chisels* like the Gorleston example (82) only become a common feature of late Bronze Age metalwork, both here and on the continent, in association with Carp's tongue material (Burgess, Coombs and Davies 1972, 217-8). Their distribution then spreads rapidly throughout the British Isles. When they occur in hoards, as they do so often, they tend not to be the only tool but to be accompanied by a selection of other types — other chisels, gouges, scribes, knives, hammers and so on. This is true, for example, of the hoards from Carleton Rode (*BAMNCM* 1977 pl. VI) and Eaton (*ibid.*, fig. 83), the latter providing a good parallel for the Gorleston chisel. They are frequently not broken but in good condition, as if they belonged to the tradesman's own tool kit. Perhaps the implication is that the single Gorleston piece was a casual acquisition by the smith.

The Ewart Park type of late Bronze Age *sword* (cf. Burgess 1968, figs. 13 and 17) is represented by several fragments. Three joining pieces (71a-c) come from a sword which was broken and mended in antiquity; such repairs are not uncommon, and reflect an inherent weakness in the design of flange-hilted swords. Blade and hilt fragments of other Ewart Park swords are also present (72, 73a-b, 74a-b). There has been an attempt to modify one broken sword blade, presumably for use as a knife or dagger, by hammering up flanges on either side as if to accommodate a handle (79). Ewart Park swords are found in many other hoards of the Atlantic bronze age/Carp's tongue phase both in Norfolk, as in the North Elmham hoard (Clough & Wade-Martins 1970, fig. 4.37-8), and elsewhere in Britain and France (Briard 1965, fig. 69; Burgess 1968, fig. 13.1).

The two *rapier* blade fragments (71d, 80) each have a flattened mid-section typical of Group IV dirks and rapiers, which were current principally in the preceding Penard/Rosnoën phase (Burgess 1974, fig. 34-5). The type is well represented in Norfolk by an example in the Downham Market hoard (Burgess 1968, fig. 4.1c).

Important for the purpose of assessing the cultural position of Gorleston I are three fragments of the diagnostic *Carp's tongue sword* (Briard 1965, fig. 69; Burgess 1968, fig. 13.1). Two pieces of blade (75a-b) can be identified by their broad, parallel-sided low central rib, which is demarcated on each side by a finely moulded groove. The third and largest fragment (74c) comprises the greater part of the tip of a *Carp's tongue sword*; close examination of the piece confirms the expert way in which these weapons were made and finished.

There are four fragments of *socketed spearhead* in the hoard, of various types (fig. 6). One is the tip of a hollow-bladed spearhead (78), a form typical of the Wilburton industry, but one which, in spite of a concentration around the type-site in the Cambridgeshire fens and another in the Thames valley, remains relatively uncommon in the mainland of East Anglia (Burgess 1968, 36, fig. 9.14; Burgess, Coombs and Davies 1972, 222-4, fig. 1a). On another fragment (77a) the hollow midrib is defined on either side by a double line or fillet; although the origins of this type may lie in the Wilburton phase or perhaps earlier (Coombs 1975, 58, fig. 7.5), it did not reach its full currency until the succeeding Ewart Park phase (Burgess, Coombs and Davies 1972, 213-4, fig. 5, 21-4). The socket of a third spearhead (76) is decorated with an incised pattern similar in style to that on a pair of matching spearheads in the Eaton (Norwich) hoard (*BAMNCM* 1977, 34) and in *Carp's tongue* contexts elsewhere in Britain and France (Burgess 1968, 39, fig. 13, 18-9). The other surviving fragment (77b), from a different weapon, is too damaged to be defined precisely.

Lastly, the *jets* (84-88) and *ingot metal* (89-91, 93-109) are such typical components of late Bronze Age hoards that no special comment on them is necessary, except to say that their presence only serves to emphasise the character of Gorleston I as a founder's hoard. The thin *splash of metal* (92) calls to mind similar items in, for example, the Guilsfield hoard (Davies 1967, 104 and fig. 2, i-m); if they are not accidental splashes, they may be test pourings to assess temperature and fluidity prior to filling a mould, or perhaps to remove some visible impurity. It is just possible that the very small and thin fragment of metal which bears one raised rib and is listed among the decorated socketed axes (63a) is really a piece of the flat ribbed plate scrap which is a puzzling feature of some Wilburton/St Brieu des Iffs hoards like Guilsfield and Isleham (Burgess 1968, 37, fig. 9-10), but to identify it positively as such would be hazardous in the extreme.

IV – CONCLUSION

The associations cited in the discussion above for the various implement types represented in Gorleston I make it plain that the influence of the *Carp's tongue* tradition can be identified in its composition. Equally it is clear that the character of the hoard is wholly that of the 'Series 2' hoards of Burgess, Coombs and Davies (1972, 228-9, 232-3), which in their view belong culturally to a transitional phase which comes to overshadow the Wilburton industry in this part of England. Thus, the main emphasis is on axes and ingot metal, but elements of the incoming ideas are present in the form of the chisel (82), the guide-ring (83) and the *Carp's tongue sword* fragments (74c, 75a, 75b), and indeed can be identified in the associations of some of the axe types themselves. Furthermore, spearheads are now only sparsely represented by fragments of four separate weapons (76, 77a, 77b, 78), at least two of which also reflect the influence of these newer traditions, and the nature of Gorleston I is far from that of the weapon hoards discussed in

detail by Coombs (1975) and represented in Norfolk by the Waterden hoard amongst others (*BAMNCM* 1977, 31-2). This being said, however, it must be stressed that Gorleston I occupies no more than an intermediate position, and by no means represents the full panoply of Carp's tongue impedimenta, which is found in greater quantity in the Eaton (Norwich) hoard (*BAMNCM* 1977, 33-4 and figs. 59-86). One must not therefore rely on the Carp's tongue elements alone, which are undoubtedly present in Gorleston I, in assessing its cultural position, without accepting also that the substantial traditions of the established Wilburton industry – the 'old school' – still had an important part to play in the complex development of bronze-working early in the seventh century B.C.

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