Heidi Wyldewood (2110492) - Academic Skills (HPHP4902)

Assignment One - Reference Focus (1,000 words)

Gündlingen Sword

Gündlingen swords were characteristic of the Late Bronze and Early Iron Age, in North-West Europe. Made from bronze, the leaf shape blade, with a full, wide tang, was thought to have been a development alongside fighting methods. Of this tang upgrade, Barry Molly states:

> A major difference with these new swords was that the tang of the weapon was integral to the handle - that is, it passed the entire way through the grip of the fist and emerged at the base of the hand. This meant that the structural integrity of the joint between blade and handle was more secure than in the previous tradition discussed above. This in turn allowed for the manufacture of heavier weapons which affected the balance and control of the weapon. This was because the full-tang not only altered the harmonics and geometry of the whole weapon but also changed the actual grip on the hilt itself. [1]

The stages of the evolving tang or individual tang stylings of the Gündlingen swords have been categorised into five types.[2] The overall strength of the sword as a unit was increased by these changes, thereby enabling other alterations. The distinctive leaf shape was created by the blade becoming wider with a gently curving symmetry along both sharpened edges. This gradual arc was one of the changes availed by the full tang, and it afforded further penetration without more pressure as the blade was swiftly pulled across on contact. At its widest part, about one third up from the tip, a Gündlingen was between three and five centimetres.[3]

These swords, slightly weightier than their predecessors, were now a slashing sword.[4] This action being more preferable than repeated striking, which damaged the blade edge; or thrusting, which left swords open to becoming stuck fast in bone, bent, or blunted at the tip upon frequent contact with wooden or bronze shields. With their centre of gravity nearer the point rather than the hilt, they were designed to 'cut deeper into the flesh as they were drawn along exposed body parts', the tactical emphasis being on places likely to cause rapid, incapacitating blood loss or the severing of tendons and muscles.[5] Additionally, due to the stab wound inflicted by them being increasingly wider at the surface than at depth, the blade

---

[1]Barry P.C. Molloy, 'What's The Bloody Point: Swordsmanship In Bronze Age Ireland And Britain' in *The Cutting Edge: Studies In Ancient And Medieval Combat*, ed. by Barry Molloy, (Stroud: Tempus, 2007) pp 90-111, (p. 104).

[2]Jaime Kaminski, 'A Gündlingen Type Sword From The Polesfleet Stream in Crawley', *Sussex Archaeological Collections*, 154 (2016) 103-112 (p. 103).

[3] Kaminski, 'A Gündlingen Type Sword From The Polesfleet Stream In Crawley', p. 105.

[4]Sasja van der Vaart-Verschoof, *Fragmenting The Chieftain – Catalogue: Late Bronze And Early Iron Age Elite Burials In The Low Countries,* (Leiden: Sidestone Press, 2017) p.29.

[5] Raphael Herman et al, 'Bronze Age Swordsmanship: New Insights From Experiments And Wear Analysis', *Journal of Archaeological Method and Theory*, 27 (2020), 1040-1083, p.1074.

could be quickly removed after any effective jabs made, leaving the sword back in play. However, many have been found with deliberately clipped or non-sharpened points, so for some warriors, lunging was becoming outmoded as inefficient. The fighting style in the Late Bronze Age advanced with the Gündlingen swords. It became faster, less chaotic, more proficient, but still very little sword-on-sword contact, for just the same as previously, warriors avoided damage to their own swords by not using them defensively.[6] It remained mostly spear first, then sword-on-shield, whilst seeking an opening.

Some of the Gündlingen swords have been recovered with scabbards, the design of which may indicate a possible use from horseback. These scabbards have distinctive wing-like features on the protective chapes. It is thought by some that these might have enabled a faster draw by using the side extension to steady or flick the bottom of the scabbard with the foot, but others disagree stating the lack of 'horse-gear' found with them would indicate otherwise.[7]

The carefully crafted design, of both the Gündlingen sword and its scabbard, does indicate their use within a 'complex martial tradition' that had evolved in skill and tactics from that of the Middle Bronze Age.[8]

They are typical finds of the Hallstatt C period, (c750 – 600 BC). Although iron swords began to appear during this time, most were slightly different to the Gündlingens. Their more decorative and longer contemporary, or perhaps descendant, the Mindelheim swords, were made frequently of both bronze and iron, and were certainly the first type to have been crafted from the new metal.[9] One of the earliest Gündlingens, dating from the 9thC BC, was found in Belgium, and it's been noted that many of the earlier finds are connected to changes in elite burial practices.[10] The overall find locations, not all linked to inhumations, cover a vast area:

> Bronze Gündlingen swords are found from Bohemia/Bavaria in the east, to the North- and West-Alpine region, to the Mediterranean, as well as in central and southern France, the Low Countries, and even parts of Britain and Ireland, with concentrations in the Thames Valley, the Low Countries, the Jura and southwest France.[11]

Analysis carried out on a collection of Gündlingen blades found in Britain and Ireland revealed an alloy mix of copper, between eighty four and eighty nine percent; tin, between six and fourteen percent; and lead, between four and eleven percent.[12] Varying traces of antimony, arsenic, silver, cobalt, nickel and zinc have been found to make up the rest of the alloy. This low-lead bronze alloy, fairly common to these swords, was poured into bivalve casts to form

---

[6] Molloy, p. 109.
[7] van der Vaart-Verschoof, *Fragmenting The Chieftain – Catalogue,* p. 32.
[8] Molloy, p. 110.
[9] Kirk Spencer, 'The Mindelheim Sword', *Bronze Age Craft,* 2006 < https://www.bronze-age-craft.com/Mindelheim_Sword.htm> [Accessed 21st October 2021].
[10] Sasja van der Vaart-Verschoof, *Fragmenting The Chieftain: A Practice-Based Study Of Early Iron Age Hallstatt C Elite Burials In The Low Countries*, (Leiden: Sidestone Press, 2017) p.43.
[11] van der Vaart-Verschoof, *Fragmenting The Chieftain – Catalogue,* p.29.
[12] Kaminski, 'A Gündlingen Type Sword From The Polesfleet Stream In Crawley', p. 107.

the blades initially, with the relatively blunt edge being subsequently sharpened through hammering and grinding.[13]

Evidence for clay casts have been found for swords, and those of stone, bronze and clay have been found for other weapons.[14] Although more difficult to work with, bronze casts may have been more advantageous in the pouring of lengthier weaponry due to the ability to hold heat throughout the pour. However, there is no material evidence for Gündlingen bronze casts at present. This maybe because of the extensive metal recycling that went on, and it is only due to certain ritual practices that so many swords themselves have been discovered.[15] Along with the metal work, some limited remains of hilt plates and pommels have been recovered and analysed. The results show these were made of either wood, bone, antler, or horn.[16]

A large number of Gündlingens have been retrieved from streams, rivers, pools and bog in northern and western Europe, including Britain and Ireland.[17] Most of these are presumed to be votive offerings. Others have been found as part of buried hoards, bent or broken, perhaps as ritual tokens or offerings too. Later many began to be buried in a new context, and the watery depositions gradually faded out, as the focus turned to the owners themselves:

> In the very last phase of the Late Bronze Age type Gündlingen swords (see Section C2.3.1.3) appear in the archeological record and are the first swords to be found both in depositional context and in burials (Fontijn 2002, 201; Roymans 1991; Warmenbol 2015). This shift from depositing swords, seen as markers of male martial elite identities, in rivers to placing them in (chieftains') burials has long been recognized, and it has been argued that the new practice of placing swords in graves forms a break with earlier customs when there seems to have been a taboo on weaponry in graves (Fontijn 2002, 230; Fontijn/Fokkens 2007, 354; Roymans 1991; Roymans/Kortlang 1999, 56)[18]

Gündlingen swords appeared in the time when the Unfield culture was moving toward inhumations. Some sword fragments have been found with cremations and pottery, and others in sword-graves minus urns.[19] These sword-graves are seen as the precursor to the full chieftain burial.[20]

The original thinking, indeed, part of a long-held idea about the Celts, was that the Gündlingen type swords found in Britain, such as the Thames finds, were due to the arrival of the style and technology through trade and communication from central Europe, via the

---

[13] Susan Deirdre Bridgford *Weapons, Warfare and Society in Britain 1250-750 BC Volume 1.* (Unpublished PhD thesis, University of Sheffield, 2000) pp. 122-123.
[14] Susan Deirdre Bridgford, *Weapons, Warfare and Society in Britain,* p. 112
[15] Ian Colquhoun *The Bronze Swords of Ireland*. (Unpublished PhD thesis, Durham University, 2015) p. 49.
[16] Kaminski, 'A Gündlingen Type Sword From The Polesfleet Stream In Crawley', p. 106.
[17] Kaminski, 'A Gündlingen Type Sword From The Polesfleet Stream In Crawley', p. 107.
[18] van der Vaart-Verschoof, *Fragmenting The Chieftain: A Practice-Based Study Of Early Iron Age,* p.85
[19] van der Vaart-Verschoof, *Fragmenting The Chieftain: A Practice-Based Study Of Early Iron Age*, p.74
[20] van der Vaart-Verschoof, *Fragmenting The Chieftain: A Practice-Based Study Of Early Iron Age* p.87

'Urnfield-Hallstatt-La Tène trajectory'.[21] Now, using genetic and linguistic evidence alongside archaeological record, some have theorised that it was the other way around, stating 'the spread of the famous 'Celtic' Gündlingen swords is now thought to have been from Britain towards central Europe.'[22] Whilst many facets of Celtic theory may hang on concretising the instigation and production of the sword, Sasja van der Vaart-Verschoof sums up one aspect of the debate thus:

> If the bronze blades turn out to be Atlantically produced then they reflect a contact network in the Late Bronze Age that differs from the Early Iron Age one (see Section 5.7). In this manner determining where and how this sword type evolved could be key to understanding how the elite burial practice evolved in the Low Countries (Chapter 5). While originally considered a North-Alpine development (Cowen 1967), it has recently become more and more accepted that the Gündlingen swords first developed in the Atlantic tradition with the British Ewart Park/Thames type swords recognized as their immediate predecessors (Fig. C2.5; Gerloff 2004, 141–5; Milcent 2004; 2009; 2012; Warmenbol 1988).[23]

Although experts may disagree on the place of innovation; direction of take-up; and dates for the Gündlingen sword, what is in no doubt is that they were a key feature in the armoury of many European warriors of the Late Bronze and Early Iron Age, therefore defined as a Celtic sword.

---

[21] Marina Silva et al, 'Once Upon A time In The West: The Archaeogenetics Of Celtic Origins', in *Exploring Celtic Origins: New Ways Forward In Archaeology, Linguistics, and Genetics,* ed. by Barry Cunliffe and John T. Koch (Oxbow Books: Oxford, UK, 2019), p. 181.
[22] Silva et al, p. 181.
[23] van der Vaart-Verschoof, *Fragmenting The Chieftain – Catalogue,* p.29.

Bibliography

Bridgford, Susan Deirdre, *Weapons, Warfare and Society in Britain 1250-750 BC Volume 1.* (Unpublished PhD thesis, University of Sheffield, 2000).

Ian Colquhoun *The Bronze Swords of Ireland*. (Unpublished PhD thesis, Durham University, 2015).

Herman, Raphael et al, 'Bronze Age Swordsmanship: New Insights From Experiments And Wear Analysis', *Journal of Archaeological Method and Theory*, 27 (2020).

Kaminski, Jaime, 'A Gündlingen Type Sword From The Polesfleet Stream in Crawley', *Sussex Archaeological Collections*, 154 (2016).

Molloy, Barry P.C., 'What's The Bloody Point: Swordsmanship In Bronze Age Ireland And Britain' in *The Cutting Edge: Studies In Ancient And Medieval Combat*, ed. by Barry Molloy, (Stroud: Tempus, 2007).

Spencer, Kirk, 'The Mindelheim Sword', *Bronze Age Craft,* 2006 < https://www.bronze-age-craft.com/Mindelheim_Sword.htm> [Accessed 21st October 2021].

Silva, Marina et al, 'Once Upon A time In The West: The Archaeogenetics Of Celtic Origins', in *Exploring Celtic Origins: New Ways Forward In Archaeology, Linguistics, and Genetics,* ed. by Barry Cunliffe and John T. Koch (Oxbow Books: Oxford, UK, 2019).

van der Vaart-Verschoof, Sasja, *Fragmenting The Chieftain: A Practice-Based Study Of Early Iron Age Hallstatt C Elite Burials In The Low Countries*, (Leiden: Sidestone Press, 2017).

van der Vaart-Verschoof, Sasja, *Fragmenting The Chieftain – Catalogue: Late Bronze And Early Iron Age Elite Burials In The Low Countries,* (Leiden: Sidestone Press, 2017).