

Organizing Warriors in the 6th and 7th century AD

The Evidence of the Stray-finds in East Denmark

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ABSTRACT

Late Germanic Iron Age weapon burials from Bornholm, Denmark, have been used to suggest the presence of a Merovingian inspired organization of warriors including conscripts. This article compares these burials' inventory, focusing on the first part of the Late Germanic Iron Age (AD 520-630), to the distribution of similar types of metal stray-finds. Mapping the stray-finds from Bornholm indicates the whereabouts of the warriors and it is discussed whether this can contribute to a plausible representation of warriors and a geographically rooted organization of warriors. This evidence is tested on equivalent stray-find material from Sjælland and adjacent islands where weapon burials are almost absent. The study shows a difference between the burial inventory and the stray-finds regarding relative numbers of specific object types, and it is clear that the standardized set of weapons originally assumed to picture the conscripted warrior cannot be found.

It is proposed that answers to how, why and in what numbers armed men were gathered are to be found in a combination of the martial mentality and ideology of the society in general and in a social code of conduct with mutual obligations between free men and leaders and between leaders of different ranks.

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Introduction

The present study addresses the question of the distribution and types of stray-finds of metal as convincingly reflecting the assumed presence of a Merovingian inspired organization of warriors during the period from c.AD 520 to c.AD 630 in present day Denmark (Jørgensen 1990; Jørgensen and Nørgård Jørgensen 1997)(Figure 1). It discusses the possibility of using stray-finds to indicate the whereabouts of the warriors and whether this can contribute to a plausible representation of numbers, relation to specific archaeological sites or complexes and, thus, a geographically rooted organization of warriors. The data suggest the existence of tentative districts including a significant site surrounded by less significant locations holding parts of weaponry. The organization behind this seems to be rooted in a martial mentality and a social code of conduct with mutual obligations between free men and leaders.

Background: Organizing Warriors

To circumscribe the overall issue of warrior organization in the Late Germanic Iron Age, it is necessary to establish – or at least seek to – *how, why* and *in what numbers* the warriors may have been recruited.

The 'how' amongst other things raises the theoretical question whether a leader had a right to call on free men to fight for his cause and if they were obligated to appear. The earliest reliable mentioning of military duties of the Danes to their king dates from AD 1085, when a naval force – the 'leiðang' – is mentioned in a written account (Skansjö and Sundström 1988). There has been speculation if this naval organisation was a reality earlier in the Viking Age, but in a thorough study historian Niels Lund (1996) concluded that there is no evidence of military duties based on landed property prior to the late 11th century Denmark. Accordingly, previous mustering of armed forces must have relied upon other sorts of obligations or agreements.



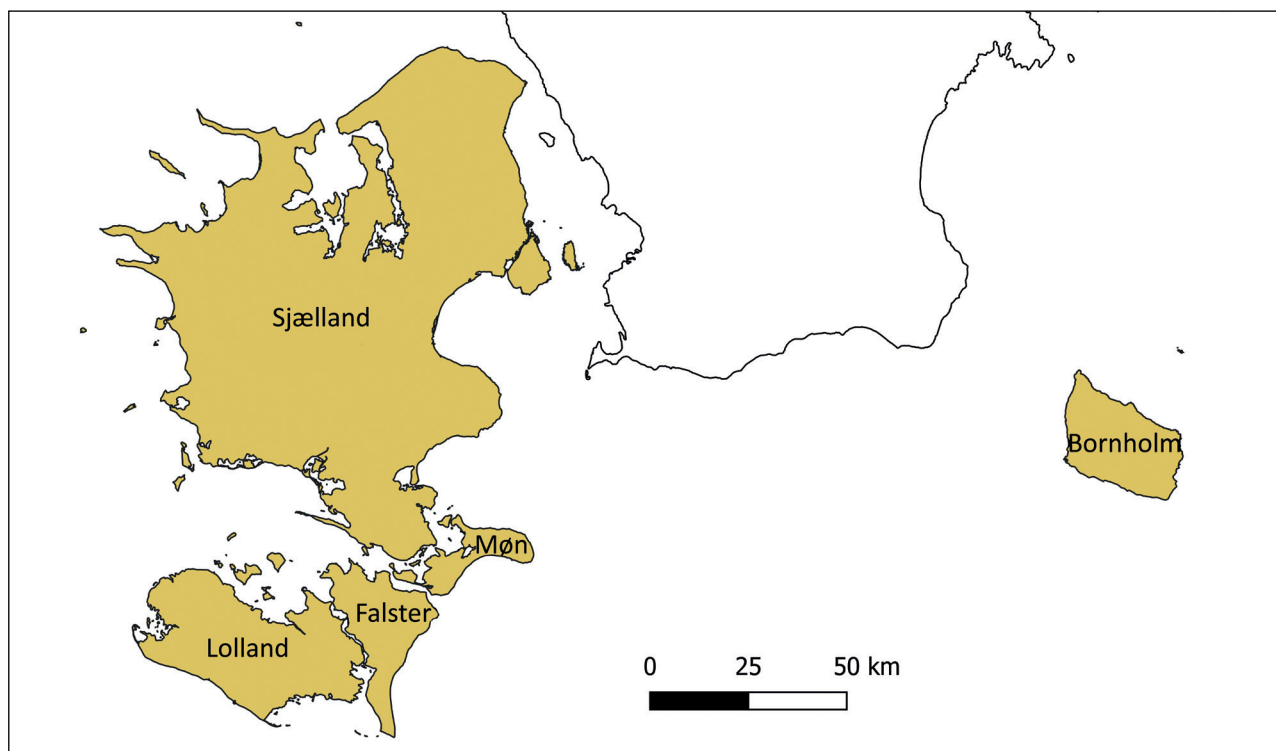


Figure 1. The eastern part of South Scandinavia. The islands included in the survey are named (Illustration: J. Ulriksen).

The ‘why’ points towards the question of the dedication of the warrior. Most people would appreciate a summons to defend one’s own village or local area as an obligation and to one’s own benefit, while combats farther away may be perceived as less important to die for. Taking into account a supposed warrior-focused mentality permeating the Germanic Iron Age society (*c.*400–*c.*700) participating in feuds and expeditions may have been seen as an obligation and of importance to establish and maintain the esteem of the single warrior and of his family and kin. In all kinds of texts from the 6th to the 13th century AD mentioning Scandinavian affairs in the second half of the 1st millennium AD, respect towards a free man rested on his wisdom, his wealth and his pedigree but was closely linked to his abilities as a warrior of honour (*e.g.*, Fulk, Bjork and Niles 2008; Olrik 1898, 1910; Søby Christensen 2002). This does not mean that every free man acted in a way comparable to the glorification in the texts of certain fierce deeds and attitudes, but it is beyond doubt that it was an ideal of the day and age.

‘In what numbers’ the warriors gathered is of some importance regarding the ‘why’-question above. Feuds between families may have been the typical conflict and according to saga texts partakers first and foremost were kin. The saga texts deal, most

of all, with incidents from Viking Age and medieval Western Norway and Iceland and rely on an Icelandic oral tradition dating from the 9th to the 13th and 14th century, when some legends were written down. In other words, the nature of the conflicts may reflect Norse traditions more than South Scandinavian ones several centuries older. However, violent and ultimately deadly struggles related to the concept of honour between families are well-recorded events in socio-economic settings comparable to the Germanic Iron Age, both in 11th and 12th century South Scandinavia (Fenger 1971) and farther away in time and space in 18th and 19th century Corse (Knudsen 1989, 202, 223, 229).

Beyond small-scale skirmishes between the odd freemen the outline of more elaborate conflicts is detectable in songs, legends and other written accounts. The attack on ‘Gallia’ of a naval force lead by the king of the Danes in the early decades of the 6th century is mentioned by Gregory of Tours in his ‘History of the Franks’ (Søby Christensen 2013, 93) and it must have been an enterprise involving several ships and crews. Later, during the first half of the 9th century the kingship of the Danes was a combat zone between several pretenders rooted in the same kin and more than once battles between two parties with large scores of warriors (*i.e.*, armies) occurred

(Rimbert 1926). How the warriors were summoned and why they participated are not recorded, though, and their numbers are obscure.

Weapon Burials as an Indicator of a Military Organization

Based on a study of burials from the island of Bornholm archaeologist Lars Jørgensen (1990) published an attempt to dig deeper into the question of the military organization of the Late Germanic Iron Age in South Scandinavia. Evaluating the swords – spatha and five types of seaxes – from c.30 inhumation burials, Jørgensen (1990, 50) established that the succession of the types followed the typological and chronological development of the seaxes in Central Europe. Including the analysis of the family structure, settlement pattern and inheritance systems Jørgensen (1988, 1990) suggested that the weapon burials combined with richly furnished female burials from c.AD 550 to AD 630 reflected a society competing for social status (Jørgensen 1990, 88-89, 94). Jørgensen stressed that the weapon burial practice was highly influenced by Merovingian tradition during these specific decades and that there were active connections to the Frankish and Alemanic areas (Jørgensen 1990, 41-44, 48-50, 89, 92). Jørgensen (1990, 92) pointed at the high score of male burials containing weapons on Bornholm (c.75%) mirroring the Merovingian practice and accordingly proposed that high ranking men from Bornholm might even have served at the Merovingian courts.¹ Returning home, they brought with them the concept of a princely retinue of high-ranking warriors, who Jørgensen (1990, 94) suggested are found for instance in the burials of Glasergård 1 and Kobbå 1 (Figure 2).

Further work on exposing weapon burials as a proxy for military organization in South Scandinavia from c.AD 520 to c.AD 800 has been executed by archaeologist Anne Nørgård Jørgensen (Jørgensen and Nørgård Jørgensen 1997, 60-117). Nørgård Jørgensen suggested that during the Late Germanic Iron Age the standard armament for free men was a sword, a lance and a shield. For 'the better-off warriors' a horse seems to have been part of the set-up (Jørgensen and Nørgård Jørgensen 1997, 97-98).

The combination of weapons in burials from the second quarter of the 6th century to the end of the 8th century to some extent follows the same lines in Scandinavia as in the Merovingian area on the Continent. The heyday of the lively contacts between the Merovingian area and Scandinavia occurred in the decades around AD 600 while the remainder of the 7th century witnessed a weakened exchange of ideas on burial practice, weaponry and organization (Jørgensen and Nørgård Jørgensen 1997, 115). Consequently, Nørgård Jørgensen proposed that Merovingian military strategy and organization were adapted at least in parts of Scandinavia (Jørgensen and Nørgård Jørgensen 1997, 109-110). This implied a leader controlling an armed force consisting of his retinue followed by foot-soldiers who may have been conscripted among free men mustering with a standardized set of weapons.

Anne Nørgård Jørgensen assumed that the weapon burial-rite identified in her survey applied to the central part of South Scandinavia too, *i.e.*, Denmark, even though weapon burials are almost absent (Jørgensen and Nørgård Jørgensen 1997, 105). Some decades later we can draw the conclusion that nearly no new weapon burials have been excavated in Denmark.²

Contrasting this, there has been a considerable increase in the number of metal objects retrieved from ploughsoils using a metal detector including bits and pieces of weapons from the Late Germanic Iron Age. Furthermore, there are parts of horse gear and mounts from scabbards and baldrics comparable to objects from the weapon burials of Bornholm. Even though out of their original context the stray-finds may be indicative of a military organization as suggested by Nørgård Jørgensen.

Surveying a Military Organization

The starting point of this survey is the island of Bornholm where the contents of the weapon burials dating from the 6th and early 7th century can be compared directly to the numerous stray-find material retrieved by amateur metal detectorists since the 1980s. In order to test the results from Bornholm the assemblages of stray-finds from the island of Sjælland and the adjacent islands of Møn, Lolland and Falster have been chosen (see Figure 1).

The chronologically diagnostic objects are the weapons. Typically, they are made of iron and organic materials and only occasionally the sword pommels, shield bosses and lance heads include parts made from copper alloy. Of the 27 weapon burials in this survey 24 contain a sword of which only six have a copper alloy pommel. Of nine lance heads three have copper alloy rivets and five of 10 shields are associated with copper alloy rivets.

Representativity and Method

In the study, 1269 East Danish sites with objects found by metal detecting have been screened for artefacts and types of weaponry of relevance have been mapped. The distribution patterns of weapon-related finds are systematically compared with the general settlement pattern within the two areas of research, *i.e.*, Bornholm and Sjælland with adjacent islands. In the absence of archaeologically excavated settlement data, metal detector finds from so-called 'metal detector sites' (*Da*: detektorpladser) are used to define settlements and evaluate the type of settlement respectively.

Being part of the modern-day state of Denmark all of the islands of the survey area have benefited from the same liberal codex for private metal detecting since the 1980s (Dobat 2016, 52-56; Trier Christiansen 2016). Thus, there is a comparable situation regarding the retrieval of metal objects. The need for similarity concerning the recovery of the stray-finds means that the Swedish province of Skåne located between Bornholm and Sjælland has to be left out. In Sweden, private metal detecting has long been forbidden and professional metal detecting by museum archaeologists follows the development-initiated archaeology (*e.g.*, Lingström 2016; Rundkvist 2008). Neither the number of single finds nor the number and distribution of sites can be compared to the Danish record in a scientific way. Thus, the material from Skåne is not comparable to the material from Bornholm or other parts of Denmark.⁴

Stray-finds are almost entirely retrieved by metal detector enthusiasts searching fields for archaeological objects as a hobby. Using this material for scientific purposes carries with it some problems of representativity. Picking areas to

detect is mostly the detectorists' own choice and even though they are sometimes guided by museums' registrations of previous finds it mostly comes down to intuition and not least the permission to survey granted by the landowner. Accessibility to land or the contrary is of great importance to distribution maps of stray-finds as hundreds of hectares may be out of bounds for the metal detectorists if an estate denies surveying. Inaccessible areas are also a consequence of modern urban communities craving more and more space. The Greater Copenhagen area covers more than 400 km² of East Sjælland and placename evidence indicates that Late Germanic Iron Age settlements have been built over during the 20th century without any archaeological control.

Most detectorists in Denmark have a developed understanding of the stray-finds' archaeological potential, consequently using GPS to register each object retrieved from the ground. A bias connected to the scientifically speaking non-organized metal detecting is that sites where objects are found frequently are revisited again and again because it is more fun to catch a 'fish' than to go home empty-handed. In this way some sites may gain the label 'metal rich' while other locations are under-prioritized and their archaeological potential unrevealed.

It almost goes without saying that metal objects retrieved from the ploughsoil have not had the best preservation conditions and to some extent every piece of metal is corroded except for gold. Many objects are broken into more parts, some are unrecognizable, and many must be considered lost (Trier Christiansen 2016, 25-28).

The metal detectorists only rarely dig up hits on iron partly due to the extreme number of modern bits and pieces of scrap-iron in the ploughsoil and partly because iron objects are normally not rewarded as treasure trove by the National Museum. This is a well-known bias of the stray-find material and the flaws are illustrated in case a dedicated search prioritizes iron as much as copper alloy. Then, parts of weapons, tools, brooches, spurs, chest mounts, and ingots may be among the finds (*e.g.*, Ulriksen 2018, 163-181; Kilde-toft Schultz 2025). Furthermore, rust never sleeps and iron objects generally degrade faster than copper alloy. Due to massive corrosion iron objects can be hard to identify in the field and consequently they are often discarded before reaching a museum's specialist.

Museum	Abbreviation	No. of screened sites	No. of LGIA sites	No. of relevant objects
Bornholms Museum	BMR	397	263	78
Museum Southeast Denmark	KNV	234	143	61
Museum Lolland-Falster	MLF	198	90	4
Museum Nordsjælland	MNS	50	22	2
Museum Vestsjælland	MVE	242	188	129
ROMU	ROMU	80	64	40
Kroppedal Museum	TAK	68	32	4
Total		1269	802	318

Figure 3. The number of locations surveyed and relevant objects distributed in museums regions. Objects from burials are not included.

From a metal detecting point of view, it is likely that just over half of the 27 burials included in this study would have a chance of being found as stray-finds in the ploughsoil because of the parts of copper alloy associated with the sword, lance, and shield.⁵ In order to increase the possibility of finding traces of the warriors among the stray-finds this study includes specific mounts from helmets, baldrics, scabbards, and shields, strap-ends, strap-gliders, strap-rivets, belt buckles, strap-distributors from horse harnesses, mounts from saddles, and bridles – all made of copper alloy, silver or gold. The specific types are either found in the Bornholmian weapon burials or they can be associated with warriors' equipment in other parts of Scandinavia or the Merovingian area within the period in question (Arwidsson 1934; Menghin 1983; Nørgård Jørgensen 1999).

The metal objects in this study are registered and stored in the regional museums of East Denmark and the National Museum in Copenhagen. The objects from the Late Germanic Iron Age are counted in the thousands originating from several hundred individual locations (Figure 3).⁶ As a consequence, assessing and valuating every original object has not been an option and the museums' finds registration has been the gateway. In the study the identification of specific types of artefacts is of the essence and, thus, it is not reliable to use lists of finds or databases generated at the museums. Instead, the museums' digital registration photos of metal objects have been the key to identify the relevant types. However, taking registration photographs of the objects has not been a routine until digital cameras were available at most museums – that is

within the last 10-15 years – and at some museums photo-registration has been suspended at times.

Not all of the registration photos have been of a quality allowing the identification of an object because of a blurred or otherwise corrupted image. Another obstacle proved to be missing photos of the reverse of some objects. Notably, disc shaped copper alloy rivets and top discs from shields can only be identified convincingly if the reverse of the disc can be scrutinized. Disc shaped brooches are more or less identical to the rivets and top discs in size and decoration and the only thing that differs is the presence of either a brooch clasp or a central pin. In cases where identification has been uncertain the specific object has been ruled out.

Consequently, the finds in this study are not in any way amounting the total number but must be regarded as a sample of objects mostly retrieved during the last couple of decades. That is a period, though, when new generations of much better metal detectors have been available, and the number of locations has been rocketing and so has the number of objects from both 'old' sites and new (*e.g.*, Dobat 2016, Fig. 1, Fig. 6).

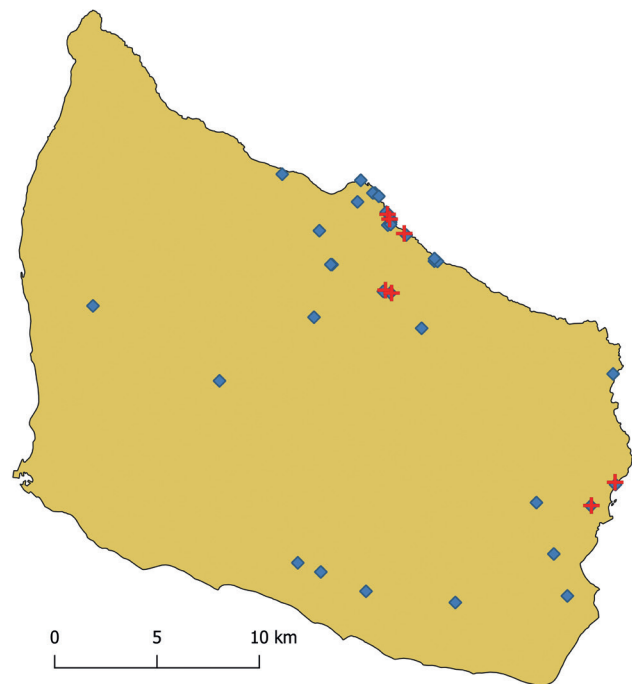
Results

Bornholm

Weaponry

Most of the 25 burials containing weaponry, mounts from baldrics or horse harnesses have been found in large cemeteries with more than 100 burials

Figure 4. Cemeteries on Bornholm with burials containing weaponry, mounts from baldrics or horse's gear dating from the decades between AD 520 and AD 630 (red crosses). Other burials dating from the Late Germanic Iron Age are marked with blue lozenges. Map contains data from the Danish Geodata Agency supplied by the author.



covering several centuries. They are located on the coast southeast of Gudhjem and *c.*2.6 km inland on high terrain *c.*100 m.a.s.l. overlooking the sea to the north. On the east coast close to Nexø two confined burial grounds have been found, one close to the shoreline and one *c.*750 m inland (Figure 4).

Regarding stray-finds as a reflection of weapon burials it must be noted that some diagnostic elements are under-represented in the metal detector material, the prestigious sword for instance. Of the 25 weapon burials 22 contain a sword, but only six of these have a pommel or a part of the hilt made of copper alloy. Another prestigious element is the horse. Among the weapon burials, one contained skeletal remains of the animal together with harness parts, while three other burials included only parts of a bridle or strap-distributors. Most equestrian objects in all four burials were made from copper alloy, thus being 'detectable'.

Taking the lance and the shield into account five of the 25 weapon burials contained associated rivets of copper alloy, and regarding buckles, mounts and strap-distributors from the baldric only seven of the 25 weapon burials would have had a chance of being spotted by a metal detectorist.

The distribution of stray-finds belonging to the warrior's equipment – the spatha, seax, (pommel and mounts from the scabbard), the shield (copper alloy rivets and top-discs from shield bosses and handles)

and the lance (domed rivet heads of copper alloy) – may indicate a concentration in the southwest part of the island.⁷ All three weapon types are represented at the otherwise rich find area at Smørenge⁸ while parts belonging to the sword including a silver ring-knob are scattered towards the coast (Figure 5).

Another concentration is connected to the central place of Sorte Muld⁹ in the northeast corner of the island, and not too far from the cemeteries in the Gudhjem area are Kobbegård¹⁰ and Lehnsgård¹¹, both with more pieces of weaponry.¹² At Sandegård¹³ to the southeast a pommel from a seax and a pyramid shaped scabbard strap-glider have been found.

The distribution of mounts, buckles, strap-ends and horse harnesses¹⁴ stresses the importance of Smørenge and Sorte Muld, and the lance rivets from Sandegård are joined by four pieces of buckles and mounts (Figure 6). The west coast shows a more dispersed picture, but it is noteworthy that at Nordre Mulebygård¹⁵ a couple of lance rivets and a scabbard mount have been found and from Gammel Skovgård¹⁶ is a gilded silver ring-knob from a sword pommel and a mount from a baldric.

Indications of a Settlement Pattern

Regarding brooches as supposedly reflecting settlements, their distribution indicates discrete settled areas or districts in the southern and western part

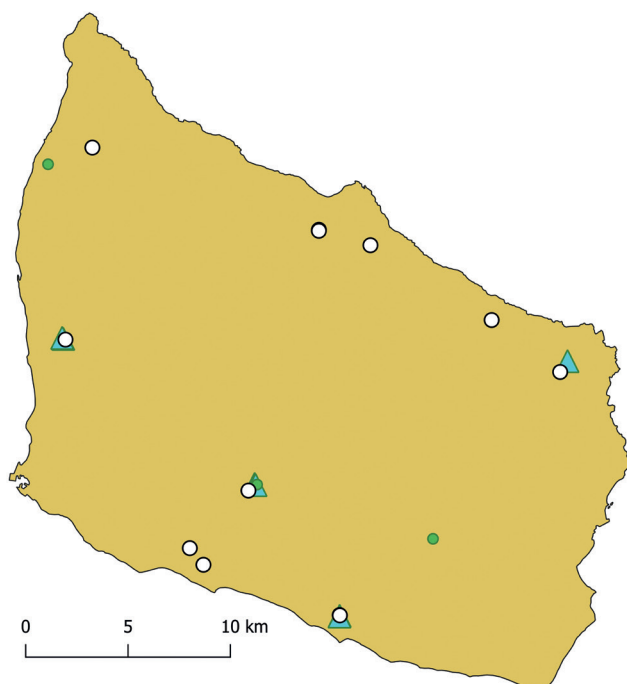


Figure 5. Distribution of stray-finds from Bornholm deriving from the sword (white dot), the shield (green dot) and the lance (blue triangle). Map contains data from the Danish Geodata Agency supplied by the author.

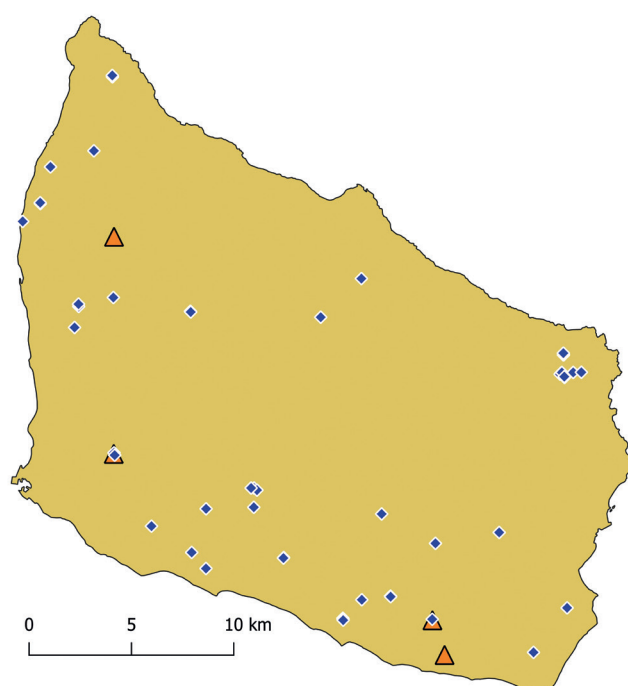


Figure 6. Distribution of stray-finds from Bornholm deriving from buckles, mounts and strap ends (blue lozenges) and horse's harness (orange triangle). Map contains data from the Danish Geodata Agency supplied by the author.

of the island while the northwest part has a more even (or scattered) distribution (Figure 7). Some of the find-less areas are woods, urban areas or otherwise uncultivated ranges where metal detectorists typically do not survey (*cf.* Jørgensen 1990, Fig. 53; F.O.S. Nielsen 1994, Fig. 16). Other areas are actually surveyed by metal detectorists but have not yet generated objects relevant to this study.

Combining the distribution of the brooches with the warrior related stray-finds the 'metal detector sites' of the island are used to point out locations

of relative significance (Figure 8). Sites labelled 'significant' have more objects of types comparable to the contents of the weapon burials. They may also contain gold foil figures (Watt 2008a, 43). Furthermore, sites with a relatively large number of metal objects dating from the period in question, *i.e.*, 15 or more items are assessed.

In spite of the paucity of warrior related finds Sorte Muld (meaning 'Black Earth') has been in focus for decades, not least because of an extra-

Figure 7. Distribution of sites with one or more of c.300 brooches dating from c.AD 520-630 on Bornholm. Map contains data from the Danish Geodata Agency supplied by the author.

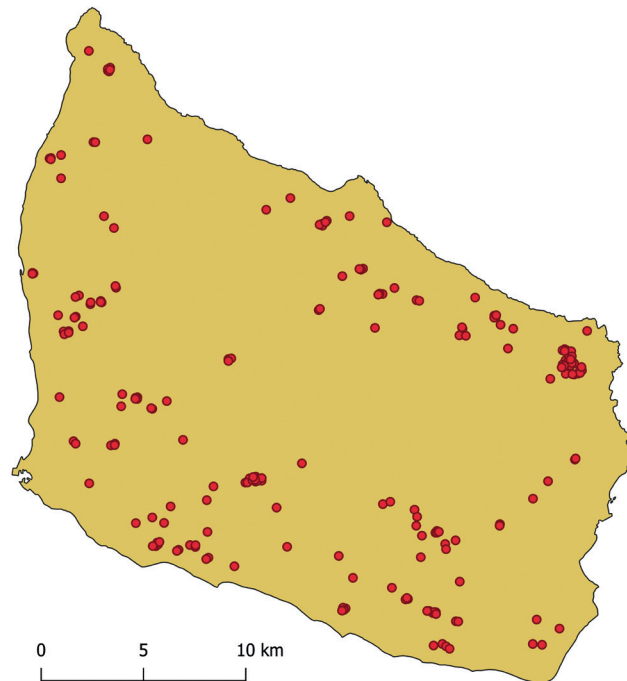
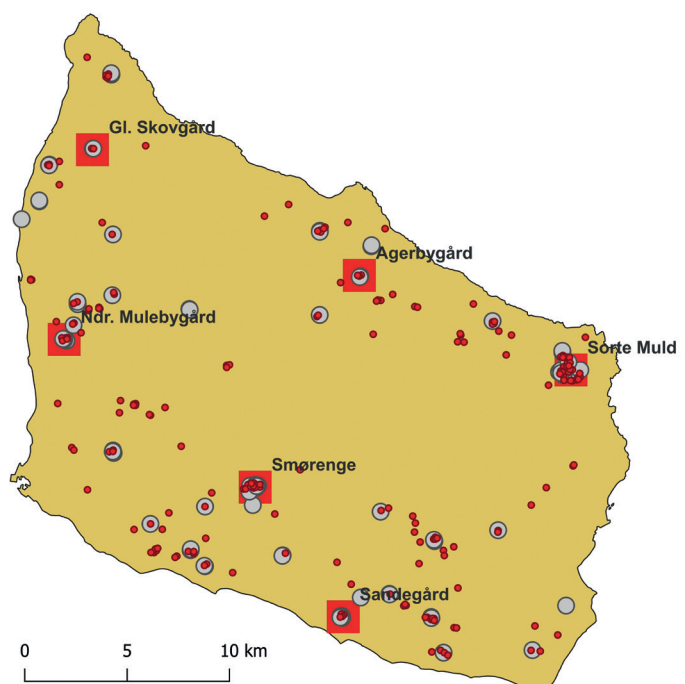


Figure 8. Settlement sites on Bornholm regarded as 'significant' (red square) in relation to the distribution of the warrior related finds (grey dot) as well as brooches (red dot). Map contains data from the Danish Geodata Agency supplied by the author.



ordinary quantity and variety of metal objects (Watt 2008b, with further references). The site is a 'complex of settlements/finds' where Sorte Muld itself is perceived as the centre (Watt 2006, 151; Christensen et al. 2008, 146-148; Jørgensen 2009, 336-337). All together the Sorte Muld complex covers c.1 km² of relatively high terrain rising from c.40 m.a.s.l. to c.70 m.a.s.l. and sits between c.1 km and 2 km from the coast. Small-scale excavations have shown a thick culture layer with objects from the Roman Iron Age to the Viking Age, but evidence

of the settlement structure or individual houses or farms is very limited (Sørensen 2008). In the light of the culture layer and the stray-finds the Sorte Muld complex is special indeed, flourishing from the Roman Iron Age and peaking during the 5th century. After this there is a gradual decrease from the mid-6th century to the 10th century (Lund Hansen 2008a, 69).

In the area of the cemeteries near Gudhjem are more locations with metal objects or other sorts of stray-finds. Rytterbakken¹⁷ is situated only 150 m

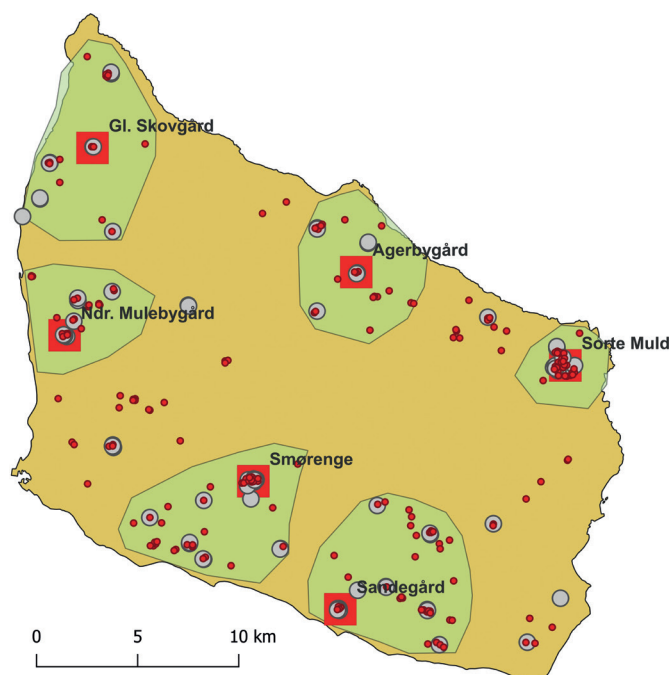


Figure 9. Tentative districts on Bornholm based on stray-finds are marked. For legend see Figure 8. Map contains data from the Danish Geodata Agency supplied by the author.

from the large twin-cemetery of Bækkegård and Glasergård, but despite nine brooches no object relating to the warrior's equipment has been found as yet.

C.4 km away, Lehnsgård and Kobbegård are located in high terrain c.2.5 km from each other overlooking the Baltic Sea 1-1.5 km to the north. Apart from the few objects relating to weaponry – from Lehnsgård two sword pommels and from Kobbegård a sword pommel and shield boss' top-disc – the find material does not excel.

Agerbygård 1.4 km to the west of Bækkegård and Glasergård sits on high ground c.105 m.a.s.l. almost in the centre of a 1.7 km by 0.8 km large 'island' bordered by steep gorges with narrow brooks on three sides while more even terrain opens an entrance way from the south. Metal detecting has revealed a fair amount of objects dating from most of the 1st millennium AD and not least from the Late Germanic Iron Age. Among the metal-finds are a strap-end and 15 gold foil figures that may indicate a settlement of significance. Additionally, nine brooches have been detected. A limited trial excavation of c.700 m² has documented a culture layer and some postholes (Watt 1998, 209-214).

Sandegård in the southeast part of Bornholm is situated c.1 km from the sea. The site holds a sword pommel, a scabbard mount, lance rivets, strap-distributors from horse harnesses, strap-mounts and buckles. Considering the other metal objects Sande-

gård has a continuous representation from the Roman Iron Age to the Viking Age. There are more than 20 brooches from the period AD 520-630. A survey of the contents of phosphate in the soil and the presence of a culture layer reflects a settlement area, not a burial ground (Watt 2006, 154-155).

Smørenge is located on the southern part of the island too but further inland. Metal objects dating from the Roman Iron Age to the Viking Age have been found within an area of 1 km by 0.5 km formed by a flat hill, which is to some extent bordered by bogs and swampy patches. Among the finds from the settlement are two lance rivets, a silver sword pommel, a shield rivet and belt buckles as well as more than 20 brooches. Further, more than 80 gold foil figures have been found (Nielsen and Watt 2019).

On the western part of the island two lance rivets and a scabbard mount have been retrieved at Nordre Mulebygård together with seven brooches.¹⁸ The site is located on even terrain 1.5 km from the sea. Both to the north and south are steep-sloping gorges with brooks.

In the hinterland of Nordre Mulebygård, some 2 km away, the site Møllegård¹⁹ has produced gold foil figures and 12 brooches. Møllegård sits on a hill-top c. 70 m.a.s.l. with rather steep sides to the west and facing two gorges with brooks to the south and the north. A passage towards more even terrain is open to the east. According to the rest of the metal

Figure 10. Sjælland and adjacent islands with burials dating from the Late Germanic Iron Age (blue lozenges). The weapon burials dating from AD 520-630 are marked with red crosses. Map contains data from the Danish Geodata Agency supplied by the author.



finds the settlement has most likely existed from the late 4th to the 11th century AD.

In the northwesternmost part of the island Gammel Skovgård is situated on a prominent hill top c. 105 m.a.s.l.²⁰ From the topsoil a ring-knob of gilded silver, a T-shaped mount from a baldric, and a disc brooch in cloisonné-technique have been retrieved. The only reason for the site not to be pointed out as 'significant' in the first place is due to the fact that only four brooches from the relevant period have been retrieved.

Including Gammel Skovgård there are six locations almost evenly dividing the rural zone of the island between them (Figure 9). There is room for a seventh site on the eastern part of the island in the Nexø-area, though. Here, more burials have been excavated including two weapon burials close to the coast, but traces of a relevant settlement have not yet been found.

Sjælland and Adjacent Islands

On Sjælland there is one weapon burial containing a seax and a rectangular scabbard mount of tinned copper alloy dating from AD 570-630 (Ravn 1989).²¹ The inhumation grave was found in a beach

ridge at Bilidt in Frederikssund accompanied by 26 other burials scattered along the coast of Roskilde Fjord, most of them disturbed by gravel digging and undated (Figure 10).²²

On the island of Møn, a weapon burial has been excavated north of the village of Elmelunde containing the skeletal remains of a male with a spatha and a shield (Nørgård Jørgensen 1989; 1999, 236-237). The burial was found in a pronounced dead ice landscape with wide views to the lower morainic terrain to the northwest, west, and southwest. A recent survey with metal detector of its surroundings has not revealed further objects or signs of additional burials.²³

The stray-finds of the weapons,²⁴ the baldric²⁵ and the horse harness²⁶ are present in most parts of Sjælland, in the westernmost part of the island of Lolland, and in the eastern part of the island of Møn (Figure 11-12).

Seen from a helicopter perspective, clusters of finds appear: on the Stevns peninsula in Southeast Sjælland, in Central Sjælland close to the town of Ringsted, in Southwest Sjælland close to the town of Korsør, in Mid-west Sjælland northeast of the town of Slagelse and in West Sjælland around and south of Lake Tissø. The northern part of Sjælland has a more scattered distribution pattern with no

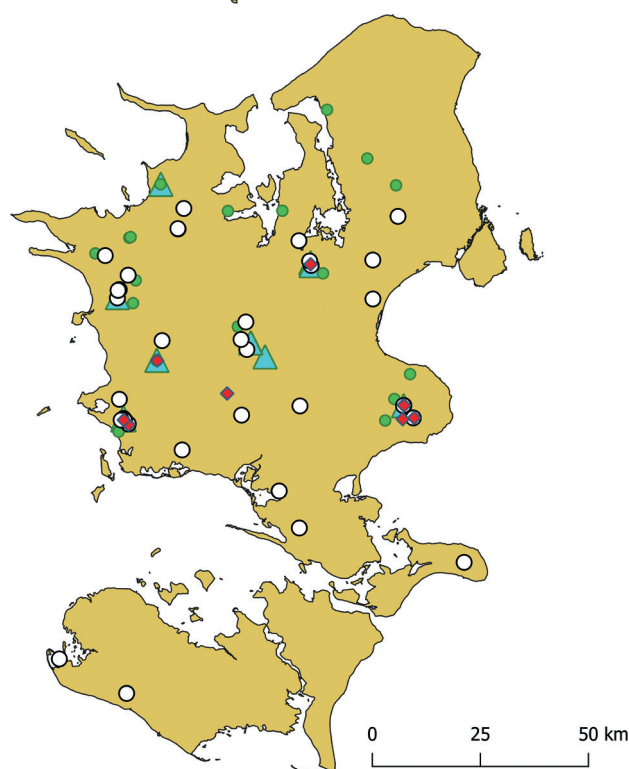


Figure 11. The distribution of stray-finds of parts of swords (white dot), lance (blue triangle), shield (green dot), helmet (red lozenge). Map contains data from the Danish Geodata Agency supplied by the author.

apparent clusters except for the Lejre area south of Roskilde Fjord. The southernmost part of Sjælland does not present a clear pattern even though a dispersed cluster is detectable on the peninsula south of the town of Næstved. On Møn the objects derive from fields west of Magleby, while the finds from West Lolland are dispersed.

The geographical distribution of the different types of warrior related objects is not even. While pieces belonging to the sword, the baldric and the horse harness are present in most parts of Sjælland this is not the case concerning lances and shields. Lances are mostly concentrated on the western part of the island with the exception of a single find on Stevns.

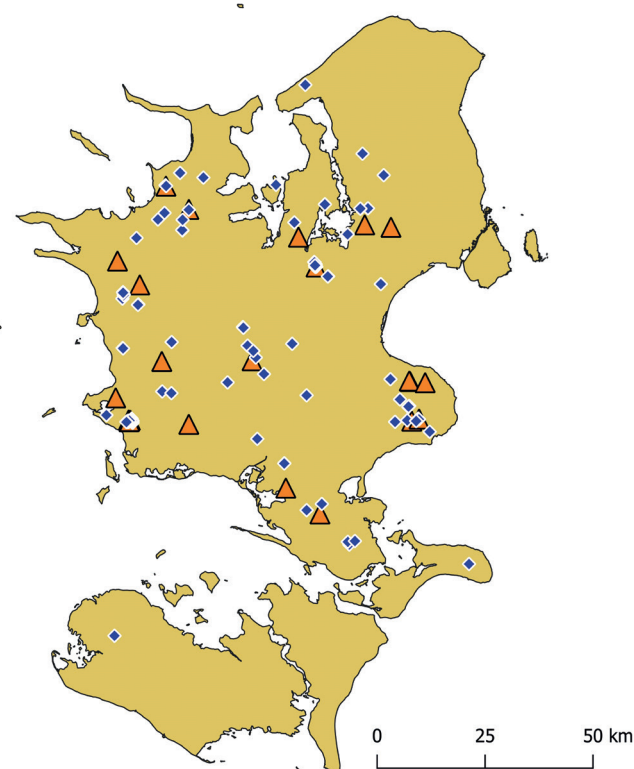
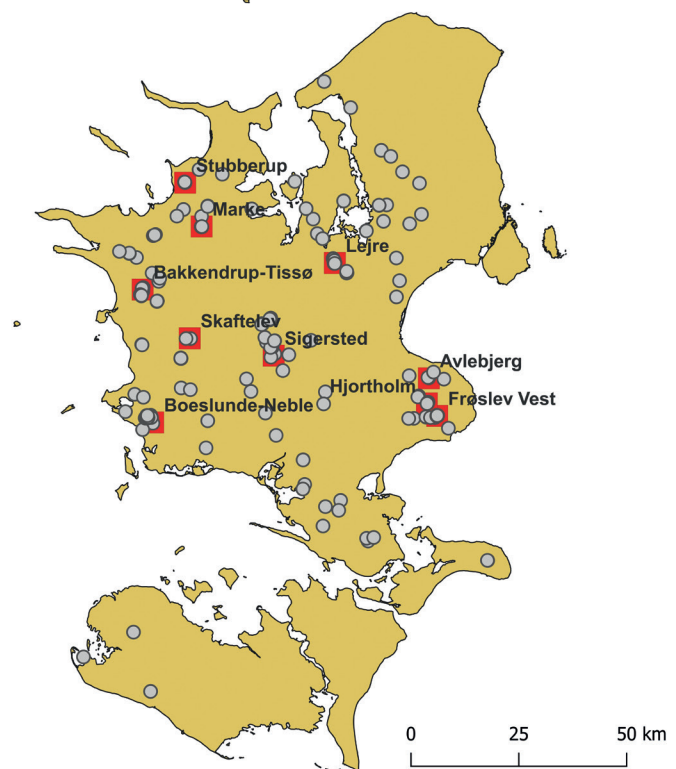


Figure 12. Distribution of parts of the baldric (blue lozenge) and the horse harness (orange triangle). Map contains data from the Danish Geodata Agency supplied by the author.

Figure 13. Settlement sites on Sjælland and adjacent islands regarded as 'significant' (red square) in relation to the distribution of the warrior related finds (grey dot). Map contains data from the Danish Geo-data Agency supplied by the author.



Shields are present in most parts of Sjælland but are not seen in South Sjælland and the islands. Regarding mounts from helmets, they have been found on Stevns, in Southwest Sjælland, Central Sjælland and at Lejre.

Connecting the distribution of warrior related objects to a recognized settlement pattern certainly has its downfalls in a limited and geographically biased number of excavated farms and villages. Nevertheless, there are excavated sites and some of them are particularly interesting. Further, 'significant sites' holding both objects from the warrior's equipment and more than 15 metal objects from the period in question are considered (Figure 13).

The most substantial concentration of objects is connected to a complex of archaeological sites surrounding the neighbouring villages of Neble and Boeslunde in Southwest Sjælland. The terrain is characterized by a marked dead ice ridge through the central part of the complex flanked by undulating ground moraine. 13 pieces of shields, eight pieces related to swords, four rivets from lances and two mounts from helmets have been found within an area of 67 ha around Neble.²⁷ Furthermore, a sword pommel and a shield rivet have been found south of Boeslunde.²⁸ There have only been limited excavations carried out in this extraordinarily rich

complex so there are no particulars regarding houses or the layout of a settlement (Albris 2014, 70-75; Museum Vestsjælland 2022; H. Nielsen 1997). Apart from the warrior related objects 111 brooches have been found.

Gudum belongs to the Mid-west Sjælland cluster.²⁹ The place name has been interpreted as 'home of the Gods' (Kousgård Sørensen 1985). In a terrain sloping from a plateau to a ford crossing a small river, a shield boss' top-disc, a mount from a helmet, a lance rivet and a bit for a horse have been found. In the same fields a large amount of metal objects dating from the Iron Age to the Scandinavian Middle Ages has been retrieved by metal detectorists, but none dating from AD 520-630 (Claudius-Hansen and Axboe 2019). A limited trial excavation has been carried out in order to establish the presence of a settlement, but the results were not conclusive (Borake 2019, Appendix II, 50-63).

In the Mid-west Sjælland cluster is the metal detector site of Skaftelø.³⁰ The only warrior related item is a mount from a baldric, but 26 brooches from the period have been retrieved. The neighbouring village of Hallelev also has metal objects among which are a sword pommel, a rare fitting of gold and cloisonné picturing a human face and 12 brooches.³¹ Together Hallelev and Skaftelø stresses the impression of an area of importance, situated in

a landscape where ground moraine and a dead ice area meet.

Bakkendrup belongs to the West Sjælland cluster.³² The site is overlooking Lake Tissø beyond a wide-stretched wetland area to the east and south-east. More limited bog land is bordering the site to the west, while the river valley and adjoining wetlands of the river Halleby Å are to the north. Access to this promontory is possible from the south. To the north and east of the present-day village metal detectorists have found pieces of a sword, a shield, a lance and 21 brooches.

Just opposite Bakkendrup on the northside of Halleby Å is the cult and residential complex of Tissø dating from the 6th to the 11th century. All in all, the archaeological traces cover c. 52 ha on elevated terrain bordered by the lake, wetlands and Halleby Å, while access is possible from the north. The name of Lake Tissø is referring to either the god of the Aesir, Tyr, or 'god' as such, stressing a cosmological dimension supported by offerings of weapons, tools and jewellery dating from the 6th to the 11th century found in the lake (Jørgensen 2009, 338-344). In this study the focus is on the earliest phase of the residential complex established in the mid-6th century at Bulbrogård in the northern part of the area (Bican 2010). Even though Bulbrogård is considered an important site until the late 7th century only two parts of a sword and two strap-ends are included in the survey.³³ At Fugledegård to the south – the area of the second residential complex from the late 7th to the 11th century – a belt buckle and a strap-end have been found.³⁴ An aspect of interest is the proximity of the above-mentioned Bakkendrup site to the Tissø complex and considering the topography it is possible that Bakkendrup has formed a sort of gateway to the residential site on the northern side of the river valley. Whether this has been the case as early as the 6th and early 7th century is uncertain, but a Viking Age bridge indicates the crossing point over the Halleby Å (Schülke 2007, 49). The importance of the Tissø complex is stressed by other locations with pieces of weaponry that have been found around Lake Tissø.³⁵

The area to the north of the Tissø complex does not form a clear cluster but more sites contain pieces of weaponry and some more substantially than others.

One of these is Stubberup, a specialised landing site on the brink of the nowadays drained Lammefjord.³⁶ Shield and lance rivets, horse harness, mounts and buckles have been found along with 20 brooches within an area of 7 ha. Excavations have revealed pit houses, which is typical for a landing site (Ulriksen 1998, 159-165; Andersen 2004).

Marke is another metal detector site some 3 km to the south of the Lammefjord situated on a low hill protruding into wetlands bordering a small river.³⁷ Here, a sword pommel and a buckle have been found together with 22 brooches.

In the border-zone between East, West, North and Central Sjælland is Lejre renowned through myths and archaeology as a unique location (Christensen 2007, 2015). Lejre is forming a complex of archaeological sites dating from the 6th to the 11th century and covering c. 32 ha along a small river dividing a pronounced dead ice area to the west from an even ground moraine formation to the east.³⁸ Lejre is considered a central cultic site and as the residence of a magnate or king. Impressive halls, large and small three aisled longhouses, and a workshop area of pit houses have been excavated on the west side of the river while a 7th century mound and burial ground from the 10th century are situated on the other side. Here, more ship settings have dominated the promontory most likely since the Late Germanic Iron Age.

At Lejre, weapon-related objects are two pommels, two shield rivets and two lance rivets. Further, there is a piece from a horse harness and 14 buckles, strap-ends and mounts. Besides the warrior related objects more than 30 brooches have been found.

No location stands out particularly for the Central Sjælland cluster, even though the fields surrounding the village of Sigersted have delivered 16 brooches and an extraordinary gold belt buckle.³⁹ C. 1 km away a piece of a bridle has been found.

Some kilometres north of Sigersted, at Gyrstinge Nord⁴⁰, a shield rivet and two buckles have been found, and from Allindemaglegård⁴¹ on the north side of Lake Gyrstinge are a pommel and two shield rivets. However, none of the sites have brooches in any significant number.

On South-east Sjælland the peninsula of Stevns holds the most obvious concentration of warrior related objects.

In the southern part of Stevns are more sites forming a dispersed cluster in itself. Here, the village of Frøslev is of particular interest as the place name indicates an elite site. According to Sofie Laurine Albris (2025, 346) the name includes the Old Danish noun **frō*, related to Gothic *frauja* 'lord', which may be identical to the name of the god Freyr.

In the fields to the west of the present-day village a sword pommel, a top-disc from a shield boss, a mount from a helmet, a strap-distributor for a horse harness, a strap-end and two belt buckles have been found.⁴² From the same period are 10 brooches. A trial excavation has revealed many features and houses dating from the Roman Iron Age or Early Germanic Iron Age as well as the Scandinavian Middle Age, which corresponds with a large part of the metal detected objects. Until now there are no buildings from the 6th and 7th centuries. Some 4-500 m to the southwest is a contemporary site with a mount and a part of shield-on-tongue belt buckle together with 16 brooches.⁴³

C.3.5 km to the northwest of Frøslev is Hjortholm where metal detectorists have found a part of a sword pommel, two scabbard mounts, a mount from a baldric, a lance rivet, three shield rivets and mount, two mounts from helmets, two buckles and a strap-end.⁴⁴ Further, there are 20 brooches, one of which is S-shaped in gilded bronze with cloisonné inlay, and two dies for gold foil figures. Limited excavations have revealed more three-aisled houses dating from the Pre-Roman Iron Age, the Roman Iron Age and the Germanic Iron Age, which corresponds with other metal objects from the site.

The village Hellested sits on high terrain close to the river valley of Tryggevælde Å. The prefix of the place name has been interpreted as meaning 'holy' and Albris has hypothesised that it has been a sacred place during the Iron Age (Albris 2025, 348-350). Of relevance here is a gilded top-disc from a shield boss and a belt buckle, but only five brooches accompany them.⁴⁵ Crop marks indicate the presence of at least one three-aisled building and large pits, but no excavation has been carried out.

C.5 km downstream of Tryggevælde Å is Avlebjerg where two strap-distributors from horse har-

nesses have been found together with 14 brooches.⁴⁶ The metal objects have mostly been retrieved in even terrain on both sides of a small brook. Whether the finds represent a burial ground or a settlement is not clear as no excavations have been carried out yet.

C.1.5 km to the northeast the Late Germanic Iron Age and Viking Age site of Strøby Toftegård is attracting attention because it is labelled a magnate settlement with a residence together with other farms in a village-like structure (Beck and Kildetoft Schultz 2025). It has been suggested earlier that the site had close connections to the residence and cult site at Lejre but being at a secondary level of the hierarchy of residences and settlements in East Sjælland (Ulriksen, Schultz and Mortensen 2020, 2-5). However, the first hall building at Strøby Toftegård seems to have been built in the mid-7th century, thus some decades later than the end of the period relevant to this study. Indeed, there are some metal objects dating from the period of interest namely nine gold foil figures retrieved by sieving the top soil when excavating the main building (Beck and Kildetoft Schultz 2025, 33-34). However, only a shield rivet can be related to the sphere of the warrior, and only two brooches predate AD 630.

C.3 km south-east of Strøby Toftegård the metal detector site of Magleby NØ holds a variety of metal objects dating from the Roman Iron Age to the Scandinavian Middle Ages among which is a mount from a horse harness.

In North-east Sjælland, the warrior related objects are present but scattered and with no relation to locations rich in metal objects or other traces of importance. The same is true regarding the Hornsherred peninsula separating Roskilde Fjord from Isefjord, except perhaps for a buckle from Selsø-Vestby interpreted as the specialized landing site related to Lejre (Ulriksen 1998, 42-78). Another buckle comes from the production site of Kirke Hyllinge-Stensgård (Ulriksen 2014, 201-202).

In the southernmost part of Sjælland, the picture more or less resembles Hornsherred with dispersed finds but with a sword pommel, a scabbard mount and a strap-distributor from a specialized landing and assembly site at Vester Egesborg (Ulriksen 2018, 175-177). Noteworthy is a die for a gold foil figure while brooches are scarce. Within a

radius of 1 km from the site, there is a stray-find of a strap-distributor from a horse harness and related to a possible burial there is a buckle and a strap-mount (Ørsnes 1966, 254 and Fig. 19-20).

As is the case on Bornholm, it is possible to point at tentative 'districts' on Sjælland when mapping the metal objects combined with the 'significant' locations. These 'districts' will be discussed in more detail below.

Distribution Patterns and Topography

Between the clusters and the scattered find spots there are obviously 'empty' areas where none of the relevant objects have been found. To some extent this may be due to the geo-morphology of the islands.

Lars Jørgensen (1990, 71-76) suggested that Bornholm consists of three main landscapes offering different conditions for agriculture. Due to an uneven terrain and many rift valleys Jørgensen considered the northwest part of the island as difficult to farm and thus having a low yield. In this area there are no possible 'significant' sites and the warrior related objects are dispersed and relatively few. Northeast Bornholm with Agerbygård and Sorte Muld has

heavy clay soil but more wetlands, which Jørgensen stressed as a positive economic factor. While most of the weapon burials are located here, not least along the coast, there are in this area only few stray-finds of metal objects from the warrior's equipment. The third area covers the southern part of the island. Compared to the other areas the south side is low lying and covered with a sandy moraine, which has been easier to farm than the heavier clay. In this area are Smørenge and Sandegård as well as the majority of the relevant stray-finds.

Regarding Sjælland and the adjacent islands, it is clear that the finds are connected to the fertile, generally clayish ground moraine landscape and mostly not at the more (or very) rugged dead ice terrain. This preference is stressed by the distribution of other types of metal objects dating from AD 520-630 (Figure 14). Nevertheless, there are also areas of ground moraine where the finds are absent. This may be due to areas of uninhabited Iron Age woodland, however, there are parts of arable land where brooches are present but weaponry is not. This is true regarding East Lolland and the entire island of Falster and it is not because of low intensity of metal detecting. More than 230 locations with metal objects are registered within these areas.⁴⁷

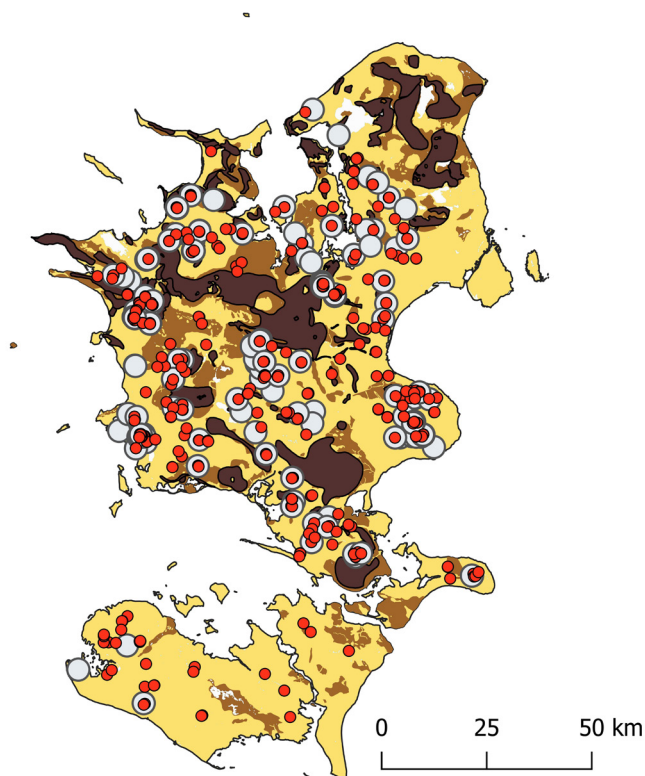


Figure 14. Distribution of sites with one or more of c.800 brooches on Sjælland and adjacent islands dating from AD 520-630 (red dot) and warrior related objects (grey dot) in relation to the dead ice terrain (brown) and pronounced dead ice (dark brown). Map contains data from the Danish Geodata Agency supplied by the author.

Discussion

Deducting a military organisation on the basis of weapon burials from Bornholm and stray-finds from the East Danish islands meets a major obstacle: how many warriors do the stray-finds represent?

Counting Warriors on Bornholm

Taking the 25 weapon burials from Bornholm as a starting point they obviously represent 25 warriors but, except for the sword (*seax* or *spatha* or both), in nearly all burials the furnishing is not standardized.⁴⁸

Of the six burials from Scandinavian Phase I (AD 520/530-560/570) five had a sword, four had a lance and four had a shield, while two of the burials also had a mount from the baldric. However, only two burials contained all weapon types and they had no mounts or fittings. Splitting up the inventory of these six warrior burials into 'stray-finds' there are 21 different pieces of copper alloy, which would have a chance of being found by a metal detectorist.⁴⁹ There are copper alloy parts from weaponry in all the burials so they would all have a chance of being retrieved.

From Scandinavian Phase II (AD 560/570-610/620) there are 19 weapon burials, all but two containing a sword.⁵⁰ Five burials had a lance and five had a shield. Five burials contained mounts, strap-ends and/or buckles while four held parts of horse harnesses. Only two burials had all three weapon types and additionally they were richly furnished with mounts and buckles as well as horse harnesses. Of the 19 burials only six contained copper alloy objects, but one by one they summed up to 86 single items with a chance of being found as stray-finds.⁵¹

Altogether, 12 of the 25 weapon burials would have a chance of being retrieved as stray-finds in the ploughsoil.

Comparing these data with the 78 warrior-related stray-finds from Bornholm it is noticeable that the total number of stray-finds comprises only around 75% of the number of objects in the 12 burials. Moreover, comparing the weapon burials and stray-finds it is evident that the relative proportions between the different categories of warrior related equipment do not correspond. The shield and the

horse harness are much more common in the burials, while mounts and swords are twice as frequent among the stray-finds.

While the number of buried warriors is clear an attempt to convert the stray-finds into an estimated number of warriors naturally poses serious questions of representativity and validity.

Thus, it is important to notice that of 86 single objects from Scandinavian Phase II burials 77 objects belong to four burials, hence representing only four warriors. These all contain several mounts, fittings, buckles and strap-ends from the baldric and the horse harness. However, leaving out these categories the sword, lance and shield are represented by 24 copper alloy objects deriving from four burials, which are also rich in mounts and the like.⁵²

It is essential to stress that the different categories of objects are not equally represented in the stray-find material because the original objects have been being split-up in different numbers of fractions.

The sword is present in all but two of the burials in question but of 25 swords,⁵³ only seven have parts of copper alloy. Theoretically, less than one out of three swords have a chance of being found using a metal detector. In contrast, the shield is present in nine burials. Even though only five shields had parts of copper alloy they amounted to 29 individual objects. Accordingly, the chance of retrieving a part of a shield is many times higher than finding the most common weapon in the burials – the sword.

Regarding the stray-finds sword pommels as well as scabbard mounts and fittings have been found in nine instances, while lances are represented by six rivets. Most frequent are buckles, strap-ends, mounts etc. counting 51 objects, while only four parts of horse harnesses and the same number of shield rivets have been found. The latter is a significantly low number since a shield holds several rivets. Comparable in size, shape and dating, the disc brooch has been registered in more than 60 cases on Bornholm, so rivets in the ploughsoil cannot be harder to detect. It is also significant that the sword is the most frequent weapon among the stray-finds contrasting the fact that less than a third of the swords from the burials had parts of copper alloy. All things considered, the comparison between the copper alloy objects from the burials and the stray-finds show the relative figures do not correlate (Figure 15).

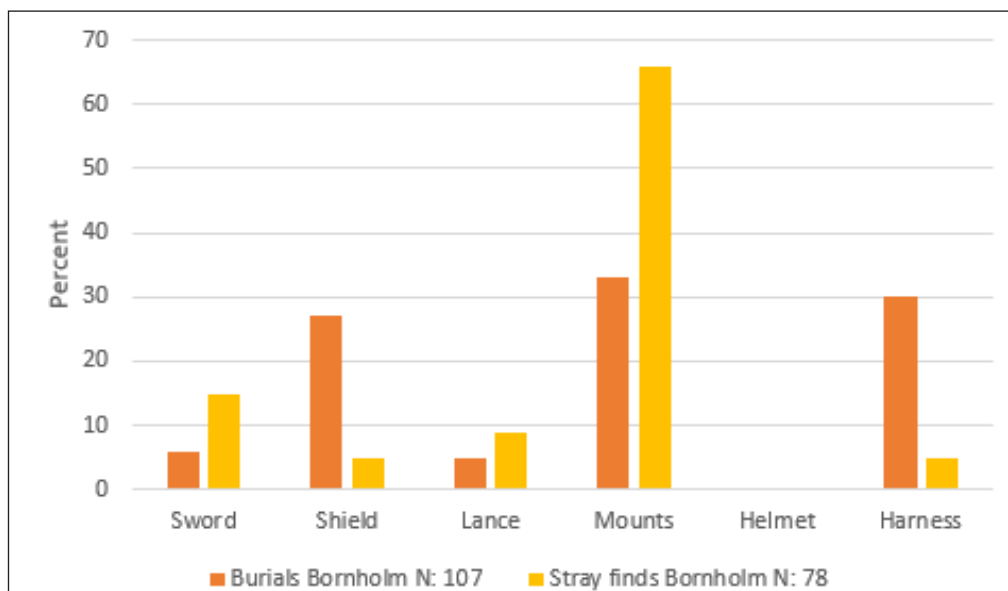


Figure 15. The relative number (percent) of the five categories of weaponry from 25 burials compared to stray-finds on Bornholm.

It is not possible to combine the stray-finds into interconnected equipment in any way, so they have to be considered individually. Consequently, the 78 warrior-related stray-finds from Bornholm hypothetically represent the same number of warriors. As mentioned earlier a little less than half of the weapon burials could possibly have been found as stray-finds as they contained objects of copper alloy. If these proportions are transferred to the stray-finds one can estimate that approximately half of the warriors are represented in the stray-find assemblage.

Following this line of speculation there may have been around 185 warriors including the 25 from the burials, a number that covers *c.* 100 years or the equivalent of *c.* three generations. According to the distribution of finds they have lived in most parts of the island and thus may reflect the farms of free men.

Considering Nørgård Jørgensen's suggestion that a sword, a lance and a shield have been a standard armament for free men with an obligation to muster when called upon is difficult to confirm. Studying the stray-finds, they do not reflect warriors armed with a standard set of weapons. Additionally, both the lance and the shield are rare despite their relatively good potential for being retrieved using a metal detector. Revisiting the data from the burials only four of 25 burials contain all three 'common' weapons. The norm is the sword found in 23 burials,

sometimes (in nine burials) combined with a shield and/or occasionally (in six burials) a lance.

The assumption that 'the better-off warriors' had a horse (*cf.* Jørgensen and Nørgård Jørgensen 1997, 98) may find some support in the fact that only four pieces of horse harnesses are registered, maybe indicating a sort of elite. However, none of the harness parts originate from one of the alleged 'significant' sites of Bornholm (*cf.* above) and only one strap-distributor has been found together with other indicative objects at Store Myregård.⁵⁴

Elite, Free Men and 'Conscripts' on Bornholm

The estimated number of warriors is not the real figure but it is clear that the archaeological record does not support a higher number at this point. The question is: hypothetically, are 185 armed men in a hierarchy of at least two levels or ranks reflecting a situation of unstable power structures fuelled by competing families between *c.* AD 550-630 (Jørgensen 1990, 88-89, 94) and forming a source for conscription (Jørgensen and Nørgård Jørgensen 1997, 109-111)?

The whereabouts of the 'competing families' may be illustrated by the simple settlement hierarchy sketched above by pointing out six locations, each holding a suite of archaeological records and objects making them stand out from the other 103 archaeo-

logical sites holding metal objects from AD 520-630.⁵⁵ It is important to note that the six locations mostly excel because of the volume and concentration of finds, not due to a higher quality of the objects. In fact, there is a remarkable uniformity in the metal objects in this study regarding the manufacturing and design displaying a mediocrity in materials and skills. Objects made of silver and gold are almost absent and so are objects manufactured in *cloisonné*-technique. When present they are mostly connected to the Sorte Muld complex (*cf.* Lund Hansen 2008a; 2008b; 2008c).

The uniform quality of the metal objects may reflect a rather flat social hierarchy, and so may the frequent location of the six 'significant' sites. Looking at the distribution of weaponry alone, each of the six locations sits within an area loosely defined by further sites including weaponry (*cf.* Figures 5-6). The border zones between them do not lack relevant objects entirely (except for the northern part of the island) but a pattern of separate districts is clear. This is emphasized when adding the distribution of brooches (see Figures 7-8).

The combined picture seems to reflect six locations performing some kind of centrality, each controlled by a magnate, with other armed men living in the hinterlands (see Figure 9). In theory the latter should represent the free men obligated to muster equipped with sets of standardized weaponry. However, the stray-finds do not unequivocally support the hypothesis of such an organization. The parts of sword, lance and shield are few in numbers, they are mostly concentrated at the six 'significant' locations, and the supposed sets of weapons are not present at any location.

On Bornholm, there has most likely been a leader among peers and the Sorte Muld complex is a strong candidate as his home-base. The general assumption that the Sorte Muld complex had an overarching role as the most important site of the period rests on the extraordinary rich find material, a thick culture layer covering parts of the complex, special objects like the more than 2000 gold foil figures, and traces of workshops and cult activities spanning several hundred years. It is, however, of interest that fluctuations in the number of finds shows a decrease in activity in the Late Germanic Iron Age compared to the Late Roman Iron Age

and the Early Germanic Iron Age (Watt 2006, 149).

The Smørenge site also attracts attention because of the rich and varied find material of copper alloy, silver and gold, as well as warrior's equipment from the Roman Iron Age to the Viking Age. The more than 80 gold foil figures indicate an extraordinary location in the middle of the 1st millennium (Nielsen and Watt 2019, Fig. 6) and just like Sorte Muld, Smørenge covers a rather large area. It is difficult to establish whether Smørenge competed with the Sorte Muld complex or if it was subordinated, maybe at the second level in the hierarchy.

The ring-knobs, inspired by Continental practice (Steuer 1987, 219-227), have been suggested as a token of rank given by a supreme leader to trusted high ranking military sub-leaders in times and places of relative stability where ordinary weapon burials do not occur (Jørgensen and Nørgård Jørgensen 1997, 113-115). On Bornholm ring-knobs have been found at Gammel Skovgård (gilded silver), Lillevang (silver) and at the Sorte Muld complex (gold), and their presence aligns poorly with the proposition regarding their role mentioned above. However, the ring-knob of solid gold from the Sorte Muld complex resembles more ring-knobs from the Iron Age cult and residential location of Gudme, Fyn (Jørgensen and Nørgård Jørgensen 1997, Fig. 71), thus highlighting the special status of the Sorte Muld complex.

A Hierarchy of Warriors and Settlements on Sjælland

Comparing the stray-find evidence from Bornholm to Sjælland and adjacent islands it is worth noticing that the latter hold approximately three times more objects from an area 15 times larger than Bornholm. Accordingly, the density of finds is far greater on Bornholm.

Moreover, there are some discrepancies regarding the relative proportions between the categories (Figure 16). In Sjælland the shield is far more frequent and the sword and the horse harness is considerably more frequent than on Bornholm. Regarding the lances and the mounts, it is the other way around. Mounts from helmets are only identified on Sjælland in this study.

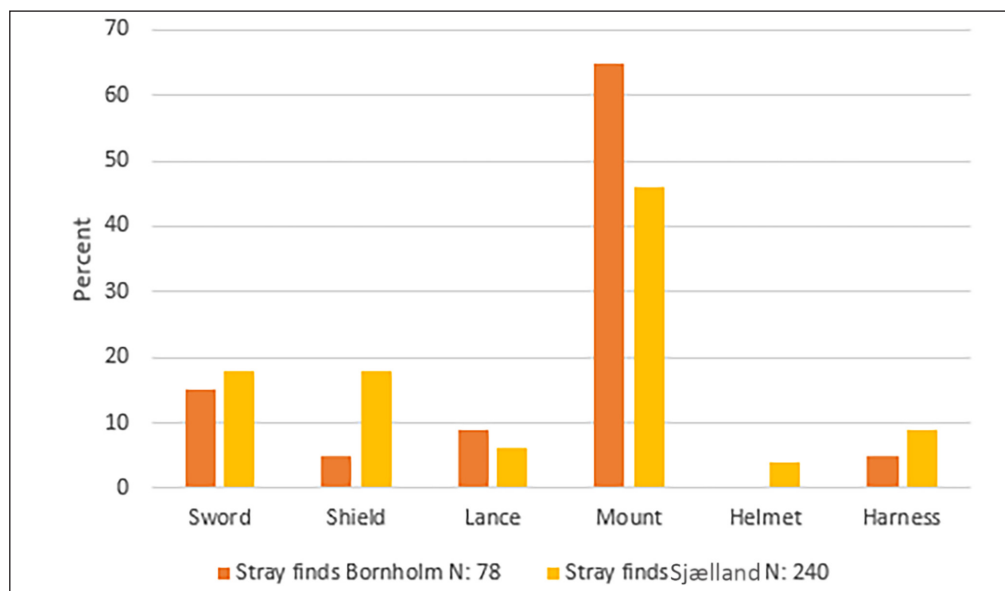


Figure 16. The relative portion of stray-finds (percent) of the six categories of weaponry from Sjælland and adjacent islands compared to the evidence of Bornholm.

Following the same line of argument as for Bornholm 240 objects related to the warrior's equipment from Sjælland and adjacent islands hypothetically represent *c.*500 individuals when adding the supposed 'missing' warriors (*cf.* above).

The distribution map supports the notion that armed men have been living in most parts of the arable areas of the islands. However, the evidence does not support the hypothesis of a standard set of weapons. Lejre, the Boeslunde complex and Hjortholm are the only locations where both sword, lance and shield are present, and they hold most of the helmet parts identified. Further, Lejre's and Boeslunde's archaeological records surpass the rest of the sites – in other words, they are significant in more ways than just on account of the weaponry.

There is a conspicuous absence of parts of shields in southern Sjælland and the islands, and the lances are concentrated in a few locations except North and South Sjælland. The pieces from horse harnesses are present in most of the clusters but as on Bornholm they are not confined to the 'significant' sites.

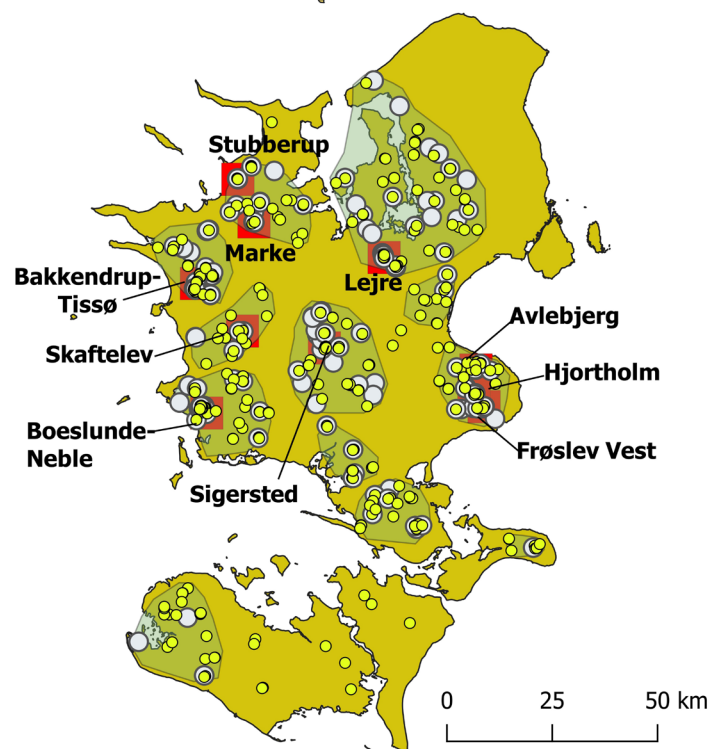
Inspected from a high altitude the finds do form clusters but zooming in they dissolve into more scattered patterns. Some of the suggested 'significant' locations may each have been a sort of centre of a district. This is most distinctive in West Sjæl-

land where four areas can be separated (Marke, Bakkendrup-Tissø, Skafteløv, and the Boeslunde complex) even though some of the border zones between them are fairly blurred (Figure 17). Stubberup is a specialised landing site, most likely connected to the district of Marke. The Stevns peninsula is a confined area regarding the distribution of finds but according to the definition of 'significant' locations there are no less than three potential sites inside this rather limited area (Avlebjerg, Hjortholm and Frøslev).

For North-east Sjælland Lejre is the most important location. It has a close hinterland of settlements more or less surrounding the cult and residence site (Christensen 2015, 231-238) but noting the scattered distribution of finds of weaponry and brooches it is quite possible that Lejre's hinterland includes the territory around Roskilde Fjord. Supporting the suggested interrelation of the area as a whole is the fact that this is the only part of Late Germanic Iron Age East Denmark where pit houses are combined with rural settlements and production sites situated inland (Ulriksen 2018, 422-425). The specialized landing site of Selsø-Vestby located at a well-protected natural harbour in the middle of the Roskilde Fjord may have belonged to Lejre (Ulriksen 1998, 78).

It is tempting to include the locations in East Sjælland between the towns of Roskilde and Køge in the district of Lejre, but the settlements in that area

Figure 17. Tentative districts (green shading) on Sjælland based on the distribution of weaponry (grey dot) and brooches (yellow dot). Map contains data from the Danish Geodata Agency supplied by the author.



lack the rural pit houses, thus indicating that there has not been an incorporation. Only a sword pommel and a belt buckle have been found in the area and even though the fertile land holds several metal detector sites including objects from the relevant period none of them has the necessary combination of finds to candidate for ‘significance’ as yet.

There are clearly areas with both weaponry and brooches where ‘significant’ locations are absent. This is particularly obvious in Central and South Sjælland, Møn, and Lolland. Nevertheless, based on the distribution of weaponry and brooches it is possible to define tentative districts for the areas in question (Figure 17).

Ranking the ‘significant’ locations hierarchically depends on whether single objects, *i.e.*, stray-finds, or excavated houses etc are considered to be diagnostic. In that regard there is no doubt that the Boeslunde complex is extraordinary both in size and in the amount of warrior related objects, the number of metal objects generally, and the quality of some of these objects. Of the 148 warrior related objects from the five districts of West and Central Sjælland the Boeslunde complex alone holds 39%. Lejre covers a smaller area but has many metal objects too, and some of these of an extraordinary quality.⁵⁷ The number of warrior related objects is not as high as at

Boeslunde, but excavations at Lejre have revealed a large hall building and a cultic area from the period under scrutiny here.

At the Tissø complex excavations have revealed a large hall building too and even though only the published part of the stray-finds can be included in this study it indicates a situation comparable to the Boeslunde complex and Lejre. Unfortunately, without corresponding excavations of the Boeslunde complex a qualified comparison is lacking an important dimension.

The suggested district of Lejre is unparalleled in size on Sjælland but the combination of ordinary settlements, warrior related objects and the topography surrounding the Roskilde Fjord supports it. One may argue for a similar district in West Sjælland from the Tissø complex to the Boeslunde complex, but this leaves us with two high-level ‘significant’ sites in the same district and the topography between them with traversing dead ice terrain and river valleys does not form a natural context either. The foundation for the Lejre district is the Roskilde Fjord unifying the coastal landscape and the importance of the fjord as the gateway to Lejre.

The evidence presented suggests that a first among peers has been connected to Lejre but having at least two magnate families more or less on the same level considering the metal objects, weaponry

and – regarding the Tissø complex – a large building with an assembly hall. The other ‘significant’ sites and districts have been placed at a lower level of the hierarchy.

Stating this, a peculiarity is found in Southwest Sjælland at Harrested Skovvej between the Boeslunde complex, the Central Sjælland district and the district around Næstved. The area holds no relevant objects but at Harrested Skovvej a large three-aisled building with a hall has been excavated (T.H.B. Hansen 2023). The hall building is more or less similar in size and construction to the first phase of halls at Lejre and indeed they were contemporaneous during the 6th and early 7th century. However, contrasting to Lejre no metal objects from the same period have been detected neither during the excavation nor in metal detector surveys in the field surrounding this building.

The District as a Power Base

All of the districts are connected to the coastline except for Central Sjælland (see Figure 17, ‘Sigersted’), which also lacks a clear ‘significant’ site. Even though it is easy to incorporate coastlines on islands the sizes of Bornholm and Sjælland there may very well have been obvious reasons for the suggested situation. During the 6th and 7th century sailing got ever more important to the Danes and specialized landing sites manifested themselves on the otherwise uninhabited coast (Ulriksen 1998, 2004, 9-18, 2018, 369-379). This development is evident throughout Scandinavia and, consequently, controlling the access from the sea and observing the fairways passing by has been crucial. This may explain the relatively larger amount of warrior related objects in West Sjælland compared to the rest of the island (see Figure 3). West Sjælland faces the Storebælt, which has very likely been the main fairway between the Baltic Sea and the Seven Seas, thus being more vulnerable to raids and accordingly more important military positions have had to be manned (Ulriksen 2024). This situation may also be the reason why it is the western part of Lolland that holds the warrior related equipment.

The increased traffic on the Baltic Sea may also be the reason why Bornholm holds a relatively larger portion of warrior related objects compared to Sjælland and adjacent islands given to the size of the territories.

Like in West Sjælland it seems to indicate more military sub-leaders, which may have been necessary in order to maintain maritime surveillance and control the access points to the island. Due to the geology of Bornholm the coasts to the north and north-west are characterized by cliffs and rocks with a limited number of suitable landing sites and the districts of the area are all connected to potential landing sites, in the present day occupied by modern harbours. The southern part of Bornholm has a steep coast at places, but generally the number of potential landing sites is larger there and so is the number of warrior related equipment.

Getting Armed Men Together

Cosmology in 5th century South Scandinavia was evidently rooted in the Norse (or Scandinavian) mythology. Acknowledging the interpretation of the gold bracteates as depicting cosmological beings like Oðin and psychopomps or even mythological scenes (Axboe 2007; Hauck 1994; Hedeager 2004, 2011) the pantheon of the Aesir and Vanir was a part of life. Embedded in this cosmology was an ideology idealizing the warrior and making the powerful leader the offspring of a male god (Oðin or Freyr) and a female *jötunn*. Thus, possessing aspects of ‘the Other World’ hidden from ordinary people the leader had an outstanding status and a special charisma representing his divine nature towards his people and vice versa (Graeber and Sahlin 2017, 2; Schjødt 2003, 390-392; Sundqvist 2012, 234). In myths, legends, songs and saga texts Oðin is closely related to the leader, selectively offering his advice to warlords and kings. He is known by 170 *heiti*, i.e., synonyms, and most of them are related to war, warriors, death – and poetry (Bek-Pedersen 2021, 153). Oðin is the wisest god of the pantheon while also representing the raging essence of the fight and the killing. The relations between god and leader, war and death are obvious.

From the mid-6th century, the animals appearing as decorative elements on brooches and mounts – the wolf, the wild boar and the eagle – are all regarded as aggressive, fierce beings closely connected to the elite (Hedeager 2004, 2011). Human-animal interaction could mean shapeshifting, so that man could become the animal and fight fearlessly



Figure 18. Eagle-shaped mount from a shield or a saddle transformed into a brooch. Found at Hjortholm on Stevns (Photo: Jens Olsen, Museum Southeast Denmark).

and viciously (Hedeager 2004, 236; also, Pedersen 2021, 129-136). The ubiquity of the martial mentality is stressed by the fact that decorations and shapes of the warrior's equipment are mirrored in the brooches of the women. Furthermore, there are examples of a transference of specific objects from the warrior's sphere to the women's sphere. For instance, an eagle-shaped mount from a shield or saddle has been transformed into a brooch (Figure 18).

In this martial mentality, organizing and sustaining a military capacity has been crucial for any powerholding leader to maintain his position. Likewise, gathering armed men for an expeditionary force aiming at getting all participants wealthier by plundering was not difficult – it may well have been based on the willing warrior alone. However, it is quite another matter to command armed men to muster for combat of the leader's choice of reason, time and place. This demands a sense of obligation on the warriors' part.

It has been suggested that such an obligation may have been rooted in a military organization based on conscripts inspired by the Merovingian model (Jørgensen and Nørgård Jørgensen 1997, 109-110). The Merovingian military organization had a complex hierarchy of positions and the most powerful had retinues reflecting their status (Sarti 2016, 284-286). The king's retinue outshone all others as it consisted of renowned men followed by their own retinues. Initially the military organisation was based on taxation of both land and persons, a system inherited from the collapsed Roman society in the area and subsequently fil-

tered through the Burgundians, the Visigoths and the Ostrogoths (Goffart 1982, 3-4; Drew 1991, 8). During the 6th century the taxation system gradually eroded especially regarding the taxes on landed property of the free Franks and was replaced by an obligation of military service to the king at their own expense (Goffart 2008, 183). Omitting to meet this obligation meant heavy fines. However, the free Franks were apparently eager to follow the king on military campaigns because they would have had the opportunity to plunder (Goffart 2008, 184, note 57).

Transferring these conditions to the society of the Danes in the decades around AD 600 meets the obvious question if a similar mode of taxation, obligation and judicial consequence existed or was adapted. Tax on landed property has been a matter of debate but it cannot convincingly be established in Denmark until the 11th century (for instance Poulsen 2011; Poulsen and Sindbæk 2011; Hansen 2016, 159-172, with further references). This is also the first time a military organisation based on landed property is known (Lund 1996).

Among the Danes of the 6th and early 7th century the obligation to perform military service does not seem to have been founded on a regulated tax system. Instead, it is likely that the military forces have been based on a social system of mutual obligations rooted in a code of honour closely intertwined with cosmology and ideology. In other words, it was a way of life.

Even at a local level there may have been leaders with a number of property-owning free men

connected to them through mutual obligations and services in terms of cultic rituals involving gifts and feasts, legal disputes, and armed conflicts. No doubt some leaders have been more important than others due to pedigree, riches, and reputation. At a higher level, leaders have had young warriors in their bread, kin and others, in other words a retinue forming a warband of professionals ready to serve (Beck, Kildetoft Schultz and Ulriksen 2025). Lower-level leaders most certainly have been connected to more important magnates. This may have been sealed by oath or by promising one's support while drinking in the leader's hall (for instance, *Beowulf*, v. 2633-2639, see Fulk, Bjork and Niles 2008), nevertheless mutual obligations have been the adhesive between them.

In this setting an armed man, a warrior, has not been conscripted on the basis of his property or because the male population legally obligated to muster on the orders of the supreme leader. Instead, the obligation has been based on a social code of conduct between two parties typically of different social ranks.⁵⁷ For his part, the higher-ranking leader would most likely have a similar relation to a magnate or king. Instead of degrading taxes free men offered gifts and services to the higher-ranking magnate and he gave prestigious valuables in return and included his followers in his lavish lifestyle through the ritual feasts he conducted (Härke 2000, 377, 379-383; Mauss 2001, 82-86; Poulsen 2011, 278-283; Graeber and Sahlin 2017, 15-16). When necessary, a high-ranking leader could call upon those who had obligated themselves to him and as men of honour they would appear, some of them with their own band of supporting armed men.

The number of steps in this pyramid of mutual obligations are difficult to assess. As stated above the archaeological material indicates a rather flat hierarchy, and the basic order may have been the same as known from Widukind's description of Viking Age Saxony. Here was an elite class of birth, a class of free men, a class of freed slaves and a class of unfree (*i.e.* slaves) (Widukind 1910, 30). It is likely that there have been differences inside the social groups regarding power, wealth and position enabling connections of obligation in the same way as between higher and lower ranking classes. Joining an expedition, the expected achievement would be the plundering of the riches of the defeated and an improved esteem as a warrior.

The initial questions of how, why and in what numbers warriors were summoned may find their answers in a system of mutual obligations based on a martial mentality closely connected to the cosmology of the period. The notion of warriors gathering around a leader hinges on the martial mentality and the society's terms of honour. Furthermore, plundering as an economic strategy has been vital for the system of obligations. Enabling a leader to offer rich gifts of golden rings, precious weaponry and clothes to his followers, plunder-aimed warfare was essential. This is known in other parts of Germanic Western Europe, but while the strategy of the Merovingian kings was to conquer territory too, apparently the South Scandinavians did not. Thus, there was no need for thousands of men joining an expedition – a fraction would do.

Concluding Remarks

Comparing the inventory of the Bornholmian weapon burials with the stray-finds of warrior related objects reveals some disagreements in the relative frequency between different parts of the equipment. This may be due to a specific selection of materials and symbols for the grave furnishing, while the parts retrieved as stray-finds mirror 'real life'. However, 'real life' has not been exactly the same on Bornholm compared to Sjælland and within the borders of the latter there is no normal, neither regarding presence or the relative numbers of artefacts. In other words, it is not possible to deduct a military organisation on the basis of standardized sets of weapons and a Merovingian inspired system of conscripts is not likely.

Without a law code regulating military organisation, it is probable that the warriors were connected to a leader by mutual obligations. Above, it has been possible to delimit districts, in most cases with a 'significant' site as its core (see Figures 9 and 17). These districts may have been the basic unit where people have attended the important gatherings connected to the *blót* and other ritual feasts at the magnate's residence. The magnate had the capacity to perform power and he controlled the interaction with the gods and 'the Other World'.

The districts may have formed a basic power base. They shall not be perceived as locked and top-down

defined entities, but it is likely that the basic levels of mutual obligations can be found here. Combined and over time they would be the core in larger entities (Iversen 2020; Helgesson 2002; Näsman 2006; Skre 2020). The districts seem to be rooted and stable for centuries. Applying the distribution of stray-finds of weaponry and brooches dating from the second part of the 7th century do not alter the picture much and the same is true regarding weaponry dating from the 8th to 11th century.

Indeed, the number of warriors indicated by the burials and stray-finds is an estimation to say the least. Nevertheless, it is a maximum number of individuals based on the available find material. Each generation on Bornholm would have had c.60 warriors across the island, and c.170 can be counted on Sjælland and adjacent islands. Based on these individuals any thought of a defence system based on fixed positions is questionable, but certainly the number of invisible warriors may have been much larger than suggested here. This is implied by the story of the king of the Danes raiding ‘Gallia’ in the early 6th century. Hypothetically – but probably not realistically – this enterprise could have been accomplished by two or three ships. We do not have archaeological evidence of South Scandinavian ships from the 6th century but based on the number of oars in the c.200 years older Nydam-boat (Bockius 2013) and the 500 years younger small longship Skuldelev 5 (Crumlin-Pedersen 2002) even this low number of vessels would have needed a crew of at least 60-90 men. The archaeologically speaking invisible warriors must have been equipped with weapons that we cannot detect today.

Summing up on ‘how’, ‘why’ and ‘in what numbers’ armed men were gathered, a martial mentality permeating all of society, combined with a social code of conduct with mutual obligations between free men and leaders and between leaders of different ranks, may give an answer to all three questions.

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Notes

- 1 A critical and reducing view on the relative number of warriors in Early Merovingian *Reihengräberfelder* is published by Doris Gutsmedl-Schumann (2012).
- 2 One example, though, is Grønbæksminde near Aulum, Central Jutland (Helt 2021).
- 3 See Supplementary Material, Table 1.
- 4 There is no doubt that the stray-find material is lying out there in the fields of Skåne. Uppåkra holds many parts of weaponry for instance (Helgesson 2002) but it is characteristic that stray-find assemblages from the odd field are not integrated in publications (e.g., Helgesson 2010; Söderberg 2005).
- 5 See Supplementary Material, Table 1.
- 6 Regarding the magnate’s residence of Tissø (Bulbrogård and Fugledegård) it has not been possible to include all the relevant find material in this study because the location is under publication (personal correspondence Mads Dengsø Jessen, the National Museum, Copenhagen). Only objects previously published or registered at Museum Vestsjælland are included here.
- 7 See Supplementary Material, Table 2.
- 8 Belonging to the location Smøenge is: BMR 766 Smøengegård; BMR 1469 Smøenge; BMR 1697 Smøenge; BMR 2652 Smøengegård SV; BMR 2654 Østre Smøengegård; BMR 3479 Smøengegård S; BMR 3550 Store Smøengegård.
- 9 Belonging to the Sorte Muld complex are: BMR 1191 Sorte Muld; BMR 1430 Brændesgård 2/Kanönhøj; BMR 1639 Dalshøj; BMR 1653 Brændesgård omr. 1; BMR 1716 Sylten 3; BMR 1795 Biskopsenge IIIB; BMR 2149 Sylten 6; BMR 2155 Brændesgård omr. 2; BMR 2156 Brændesgård omr. 3; BMR 2280 Engegård; BMR 2508 Kanönhøj; BMR 2509 Kanönhøj Syd; BMR 2648 Nørregård; BMR 2650 Kanönhøj/Sønderhøj; BMR 3065 Dalshøj II; BMR 3141 Paradisgård; BMR 3144 Grydehøj; BMR 3185 Dalshøj III; BMR 3200 Engegård Nord; BMR 3308 Hallebrøndhøj-Frennegård; BMR 4110 Nørregård.

- 10 BMR 2114 Kobbegård; BMR 3792 Kobbegård II.
- 11 BMR 1836 Lehnsgård; BMR 3860 Lehnsgård NØ.
- 12 See Supplementary Material, Table 2.
- 13 BMR 1371 Sandegård.
- 14 A total of 55 objects.
- 15 BMR 2812 Ndr. Mulebygård; BMR 3227 Ndr. Mulebygård.
- 16 BMR 1569 Gammel Skovgård.
- 17 BMR 750 Rytterbakken.
- 18 BMR 2812 Ndr. Mulebygård; BMR 3227 Ndr. Mulebygård.
- 19 BMR 1235 Møllegård.
- 20 See note 16.
- 21 See Supplementary Material, Table 1.
- 22 In Krageskov near Køge a low mound was excavated by the National Museum in 1875. According to Mogens Ørsnes (1966, 254) a single-edged sword was found. A specific type or dating is not recorded.
- 23 The survey was initiated by the Author and carried out by an experienced detectorist, Robert Poulsen.
- 24 108 objects. See Supplementary Material, Table 2.
- 25 110 objects. See Supplementary Material, Table 2.
- 26 22 objects. See Supplementary Material, Table 2.
- 27 AMK 1989027 Grisebjerg 1; AMK 36/89 Neble 2; MVE 3380 Grisebjerggård; MVE 3425 Maglegård; MVE 4322 Neble NØ; SVM 1321 Neble detektorfund; SMV 1449 Neble; SVM 1533 Neble SV.
- 28 MVE 3536 Langetofte.
- 29 SVM 1452 Gudum N. See Borake 2019, Appendix I, 55-71.
- 30 MVE 3041 Skafteløv.
- 31 MVE 3086 Hallelev.
- 32 KAM 2009-003 Skadhauges Mark; MVE 3014-1 Bakkenrup Nord. Cf. Borake 2019, Appendix I, 12-27. Further MVE 3167 Bakkendrupvej 40-42.
- 33 KAM 2008-011 Bulbrogård; MVE 3167 Bakkendrupvej 40-42, Lille Fuglede.
- 34 MVE 4205 Fugledegård. Almost certainly, this is not the true picture, which most likely will be unfolded in the coming publication of the Tissø complex. Cf. note 5.
- 35 MVE 3089 Sæbygård; MVE 3496 Jorløse; MVE 4250 Halleby Hale; Hallebygård (no museum's site registration number as yet).
- 36 OHM 1164 Stubberup.
- 37 MVE 3127 Marke.
- 38 ROM 615 Fredshøj; ROM 641 Mysselhøjgård; ROM 3577 Lejre By. Among the metal objects are items dating from the Roman Iron Age and the Early Germanic Iron Age, the Viking Age and the Scandinavian Middle Ages. Cf. Bastrup 2015.
- 39 SVM 1370 Sigersted NØ; SVM 1382 Sigersted SØ; SVM 2002-020 Sigersted Kirke Ø; SVM 1383 Sigersted S.
- 40 SVM 1502 Gyrstinge Nord.
- 41 SVM 1478 Allindemaglegård.
- 42 KNV 294 Frøslev Vest.
- 43 KNV 224 Frøslev matr. 10c.
- 44 KNV 1125 Hjortholm.
- 45 KNV 92 Hellested Nord.
- 46 KNV 914 Avlebjerg.
- 47 According to the central data base 'Finds and monuments' at the Agency for Culture and Palaces with the search terms 'Diverse anlæg og genstande' – 'Enkeltfund' – 'Detektor'.
- 48 See Supplementary Material, Table 1.
- 49 The thorn from shield-on-tongue buckles is counted separately – they are only rarely found still connected to the buckle. Shield bosses may have between four and six rivets and a top-disc, while the handle has two rivets. The lance has two rivets. The sword typically only has a pommel of copper alloy but there may be additional parts of the hilt as well as scabbard mounts of copper alloy.
- 50 See Supplementary Material, Table 1.
- 51 Regarding a burial from Nymølle grave 1 at Nexø the inventory is not described in detail (Jørgensen 1990, 143), but in his catalogue Mogens Ørsnes notes that the shield boss probably has had a top-disc (Ørsnes 1966, 246). This assumption is not taken into account here.
- 52 See Supplementary Material, Table 1.
- 53 There were two swords in three burials.
- 54 BMR 3542 Store Myregård ØSØ.
- 55 In the study there are 172 different locations from Bornholm with metal objects from the relevant period with a separate Bornholm's Museum's site registration number. They have all been assessed and due to topography and short distances between two or more site registration numbers some have been joined ending up with 109 locations.
- 56 Lejre holds c.23% of the warrior related equipment from South and East Sjælland.
- 57 In Anglo-Saxon England the personal bond between a warrior and his lord overruled the warrior's obligation to the King and if so, the warrior would even follow his lord into exile if he was a man of honour (Abels 1988, 16-17).

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Supplementary Material

Material see also .xlsx-attachment

Table captions:

Table 1. Inventory from weapon burials from East Denmark dating AD 520-630. The weapon definitions are from Nørgård Jørgensen 1999, while the mounts, buckles and harness parts are in accordance with Ørsnes 1966. The chronological phases relate to Nørgård Jørgensen 1999. Data from Jørgensen 1990; Jørgensen and Nørgård Jørgensen 1997; Nørgård Jørgensen 1999.

Table 2. Stray-finds of warrior related metal objects included in the survey. The table is divided in 'sword', 'lance', 'shield', 'helmet', 'mounts', 'strap ends and buckles' and 'horse harness'. The locations are listed alphabetically. In the right-hand column, the related museum is listed.