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# The Metal Detector – Friend or Foe

## *Aspects of Metal Detector Archaeology in Denmark*

### Abstract

*25 years ago Danish archaeologists looked upon the metal detector as a dangerous device. It was feared that detectors would be used to plunder archaeological sites, as has happened in other countries. Instruction and information from Danish museums have ensured that only a minimum of the detector finds do not end in public collections. The result of this strategy is an enormous amount of metal objects which are very important sources for describing the societies of the metal-ages. Especially the thousands of finds from the Iron Age and Viking Period have resulted in important new information about trade, craft, communication and technology during these periods. Today the largest problem concerning detector finds is to obtain a survey of the material for use in scientific studies of prehistoric society. It is suggested that the internet could be a helpful media in this connection.*

### Keywords:

*Metal detector, treasure-trove, amateur archaeologist, iron age, foreign contacts.*



*Location of research area.*

## Introduction

In the late 1970s the National Museum received the first objects found by Danish amateur archaeologists using metal detectors. In the middle of the 1980s metal detectors were used at 50% of the places where treasure-troves were found, and today this share is about 80% (Fig. 1).

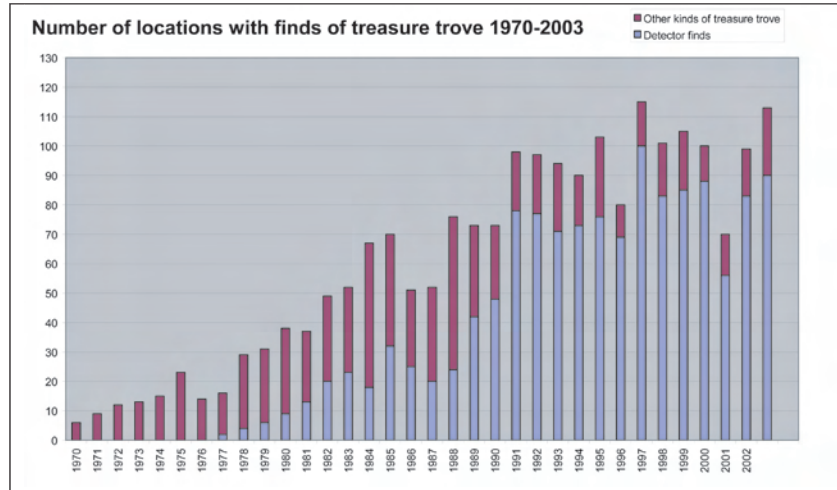


Fig. 1. Danish locations with treasure-trove finds, 1970-2003. The detector finds are marked in blue. Data: The National Museum, Copenhagen/Peter Vang Petersen.

If we count the number of objects rather than the number of find spots, we see that metal detectors have been involved in most cases during the last decades. This development since the late 1970s is a consequence of the very liberal attitude towards amateur archaeologists and towards the use of metal detectors in areas that are not protected by law (Fig. 2).

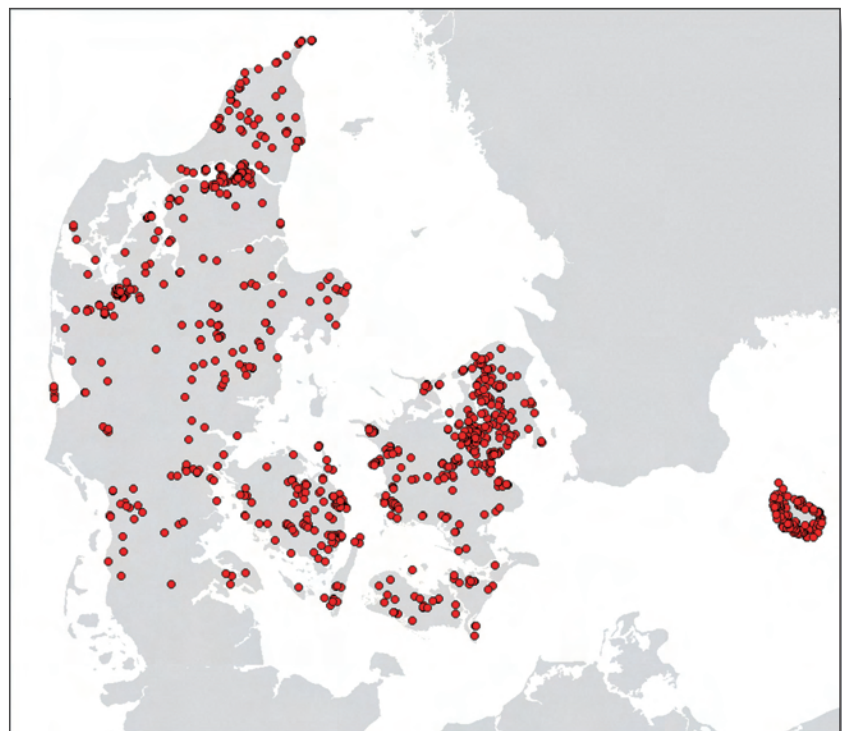


Fig. 2. Danish locations, where treasure-troves have been found using a metal detector. Data: Kultur- arvsstyrelsen, Det Kulturhistoriske Centralregister/Jørgen Christoffersen, March 2003. Drawing by Lars Ewald Jensen.

25 years ago Danish archaeologists feared that the use of metal detectors would lead to treasure hunting and illegal trade in

antiquities. Today this electronic device is regarded as being no more dangerous than a shovel, and the use of metal detectors is no longer mystified (Axboe 1992; Nielsen & Petersen 1993; Henriksen (ED.) 2000).

Most Danish archaeologists accept detector enthusiasts as important partners, and as a result of the close relations to this group of amateur archaeologists we have avoided serious conflicts until now. Rather than causing problems, detector enthusiasts have made some of the most important contributions to archaeological research since the introduction of mechanical excavators during the 1960s. Examples of types of places found by detector enthusiasts are specialised worksites, as well as trading and landing sites from the Late Iron Age and Viking Period. Moreover some of the classical kinds of finds and finding places have increased in number, for instance hoards with weapons, mountings, coins and jewellery, as well as graves.

The many new find spots and the tens of thousands of objects which have been found with metal detectors in Denmark and Scania during the last two decades have provided important new sources for the study of art, style, production techniques, trade, and regional as well as international communication. This paper will give some examples of the potential of these metal finds from the Iron Age, Viking- and Early Medieval Period.

## Treasures

Many treasures and other kinds of deposits of metal objects from prehistory as well as from the last millennium were found during peat cutting and cultivation of hitherto marginal soils during the 19th century (e.g. Fønnesbech-Sandberg 1985). Due to unprofessional and unsystematic methods of recovery much information concerning exact find circumstances – even the exact location of the find spot – was lost. In several cases, 19th century find places have been revisited by detector enthusiasts, and the results have been overwhelming. The most recent example is the localisation of a place at Boltinggård Skov, on central Fyn, where two gold rings and 3 Roman aurei and solidi were found between 1867 and 1916. In each of the years 1987, 1994 and 2004 a Roman gold coin was found, and in each case the detector enthusiast carefully measured the exact spot where the coin was discovered. As it was clear that the 3 coins had been found in a line parallel to the direction of the ploughing of the field, it appeared that a closed deposit was being disturbed (Fig. 3). This led to an excavation in the spring of 2004, and 9 more coins were found in situ in a small pit below the topsoil (Fig. 4). The systematic efforts of well-trained detector enthusiasts thus made it possible to acquire very rare and important details about the place where the gold hoard had been deposited (Henriksen & Horsnæs 2004).

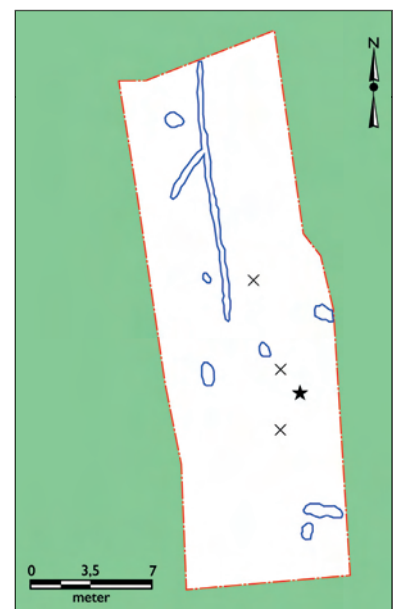


Fig. 3. Boltinggård Skov, part of excavation plan. X; detector finds of gold coins. \*; Pit with 9 Roman gold coins found during excavation. Drawing by Lars Ewald Jensen.



Fig. 4. Boltinggård Skov. A gold hoard reunited after 137 years of separation! Photograph by John Lee, The National Museum.



Fig. 5. Undisturbed hoard of gold rings from Gudme, south-east Fyn, in situ in the soil (a) and cleaned in the museum (b). The hoard was located using a metal detector at the surface of the field!  
Photograph by Claus Madsen.

Quite a lot of “new” treasures have been located through metal detector surveys since the early 1980s, especially on the island of Bornholm, on south-west Sjælland and in the Gudme-area, on south-east Fyn (Nielsen & Petersen 1993). Most of the treasures have been located because they were completely or partly ploughed up and therefore “easy” to detect in the topsoil, but in a few cases where extremely skilled detector enthusiasts were involved, it was possible to locate hoards even below the approximately 35cm thick layer of topsoil (Fig. 5a + b) (Madsen & Thrane 1991).

## Graves

The metal detector is a very helpful instrument during the excavation of Bronze and Iron Age graves. Here the device can be used to point out where metal objects are situated in a grave, to prevent the fragile pieces from being damaged by the trowel. In several cases it has even been fruitful to make a survey of the topsoil to locate objects which have been ploughed up from partly or even completely destroyed graves. This has been the case at several Bronze Age grave mounds on Fyn and Sjælland. When detecting at Late Iron Age cemeteries on the island of Bornholm, many fibulas and mounts have been found in this way, indicating that the excavated graves were only preserved because they had been dug down more than 40 cm (Jørgensen & Jørgensen 1997, 13ff).

At the largest Danish cemetery from the Early Iron Age, Møl-



*Fig. 6. Gold objects found using a metal detector in the topsoil at the Møllegårdsmarken cemetery. Photograph by Claus Madsen.*

legårdsmarken, near Gudme on south-east Fyn, the result of detector surveys of the topsoil has been several fibulas, some of which are younger than the latest of the approximately 2300 excavated graves. This could indicate that graves from the 5th and even early 6th century were present, but that they were located on top of the topsoil and therefore removed during the cultivation of the field a long time ago (Henriksen 2001). Fragments of ring gold, normally connected to hoards, were found at the same time, perhaps indicating that there had been offerings at the cemetery (Fig. 6). These observations would not have been possible without the help of the metal detector and the skilled detector enthusiasts.

## Foreign contacts

We assume that most of the detector finds were produced in the area or the region where they are found, but at many of the central places there are also objects of foreign origin (Fig. 7). In Gudme there were hundreds of Roman coins as well as fragments of Roman statues, figures, bronze-cauldrons, and even scraps from silver vessels. Some of the metal objects from Gudme were produced within the area of the Cernjachov Culture in South-East Europe, while a few fibulas are of Frankish origin. Contacts to the Caliphate can be documented by several Kufic silver coins. Thus the use of metal detectors has proved that during the Iron Age and Viking Period this centre of trade, production and cult had relations to many corners of Europe – and even beyond (Nielsen et al. (eds.) 1994).



*Fig. 7. Mount in the shape of a tinned bronze fish, probably of Roman origin. Found using a metal detector at the specialised work site at Troelsegård Øst near Odense, Fyn. Photograph by Jørgen Nielsen.*



Fig. 8. Evidence of long-distance connections in the Viking Age. Two nearly identical gilded and tinned bronze fibulas from Strandby, South-west Fyn, and Uppåkra, Southern Scania.

Photograph by Mogens Bo Henriksen.

Imported metal objects are among the best indications of foreign connections during the Iron Age, but we can also get valuable information from the study of parallels to the Danish material.

Two fibulas from the Viking Period found in Strandby, on south-west Fyn, and in the large central settlement Uppåkra in Scania are so similar in form, technique and decoration that they must have been produced from the same model – perhaps even by the same man. It is not possible to say whether the fibulas were made in or near Strandby or Uppåkra – or at a third place – but in any case they indicate interregional contacts in the 9th century (Fig. 8).

A gilded and tinned shield mount from Tissø in north-west Sjælland has its closest parallel in the Sutton Hoo ship burial. These finds yield information about relations between the international trading site at Tissø and the European aristocracy in the 7th century.

The shield mount from Tissø is also interesting because it illustrates the necessity of re-evaluating traditional groups of finds from the Late Iron Age. Until two decades ago weapons and harness equipment from the 6th – 8th century were known from several grave finds in Norway, Sweden and from the Danish islands of Bornholm, Sjælland and Møn (Jørgensen 1999). Judging from the almost complete absence of weapon equipment and harness-mountings in Jutland and Fyn there seemed to be a difference in the material culture of western Denmark and other regions of Scandinavia. During recent years, however, dozens of mountings from shields, swords, scabbards, lances, harnesses and even helmets have been found during survey with metal detectors at work sites all over Denmark and Scania. Of course these finds tell us that weapons and harnesses were produced or repaired at the central sites. More important is their testimony to marked regional differences in burial customs, and the expression of status and position during the Late Iron Age (Fig. 9).



Fig. 9. Shield mounts from Tissø, north-west Sjælland, Denmark (a), and Sutton Hoo, Eastern England (b). Photograph by Dorte Gramtorp and from Bruce-Mittford 1978, plates 7b & d.

## Future studies

Today, metal finds from Scania and especially from Denmark number in the tens of thousands. Some of the objects are stored in the National Museum in Copenhagen, but more are kept in local museums spread all over the country. Therefore, it is impossible to get a general overview of the material, and it is difficult to use the objects in informative and important supra-regional studies.

Hopefully it will be possible to find a mode of quick and uniform presentation of the detector finds in order to benefit from their potential in current research. The internet should play an impor-



tant role in this connection. One could imagine a kind of inventoria archaeologica – simple catalogues with drawings and/or photos of metal objects combined with schematic information about the find spot, context, dating, material, literature and so on.

Such a web-catalogue would facilitate mapping types of objects or special handicraft techniques, for example. A few years ago the author spent a great deal of time examining detector finds in several Danish and Scanian museums to get just the slightest idea of the chronological and geographical dispersion of tinning technique in the Late Iron Age. It would not have been possible to complete this study exclusively through the internet, but much time could have been gained for more detailed studies, if a web catalogue with descriptions of detector finds from Northern Europe – or just from Denmark – had been accessible (Fig. 10).

The study of tinned bronzes has shown that this technique was used in the same way all over Southern Scandinavia – and even beyond, indicating that the bronze objects were produced in central work-sites – or by travelling craftsmen (Gramtorp & Henriksen 2000; 2002). It is absolutely certain that more detailed studies of the bronzes would make it possible to identify the individual production centres or even the craftsmen themselves. This would be possible through the study of the characteristic stamps on many of the bronzes, for instance on rectangular plate fibulas from the 7th century. These stamps can be compared to fingerprints, and if Interpol can store millions of fingerprints, one would suppose that European archaeologists would be able to do the same thing with a few thousand stamps (Fig. 11).

The study of stamps on a few bracteates has already proven the potential of this method (e.g. Axboe 1994), so if we study bronze objects from the Late Iron Age we might acquire more information about mobility and communication in this period.

## Conclusion

I am convinced that the liberal attitude towards metal detectors and amateur archaeologists in Denmark has brought more benefits than problems. One of the success stories in this connection is that Danish metal detector enthusiasts have helped and instructed Norwegian archaeologists in Oslo, Swedish archaeologists in Lund, and German archaeologists in Kiel. The important and numerous finds from Kaupang, Ravlunda, Uppåkra and Hedeby are results of this "export of know-how and experience" (e.g. Paulsson 1999). We can conclude that this co-operation has changed the mind of Swedish or at least Scanian archaeologists, so that their attitude towards the use of metal detectors is more liberal today than it was 10 years ago. Would the same situation be possible in Poland? I think that within the next deca-



Fig. 10. Tinned bronze fibula from Hjulby, eastern Fyn.

Photograph by Jørgen Nielsen.



Fig. 11. "Finger prints" of the Iron Age craftsman. Stamps on the fibula shown as Fig. 10.

Photograph by Dorte Gramtorp.

des metal detectors will be widespread in the countries south of the Baltic, and we could hope that our colleagues in Germany, Poland – and the Baltic States – will meet this development with co-operation, education, information *and* information instead of resistance and prohibition. If our colleagues to the south learn from our mistakes and progresses – and if we co-operate across the Baltic Sea – we will be able to collect fantastic material for the study of interregional relations during the formative centuries of our countries.

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