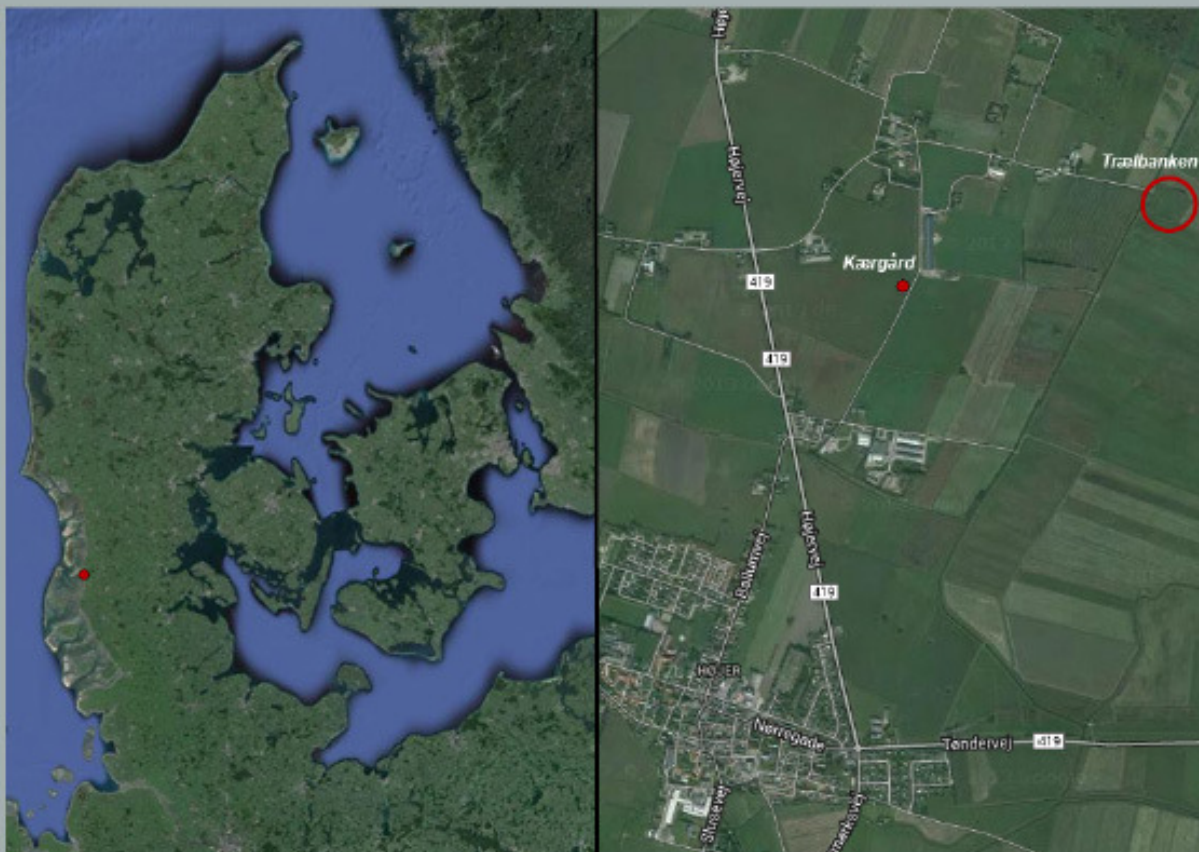


# HAM 4980 x399, Kærgård (FHM 4296/1886)



Analysis of macrofossils from a  
cellar from the Early Roman Iron  
Age

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AFDELING FOR KONSERVING OG NATURVIDENSKAB

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### ***HAM 4980, Kærgård, x399 (FHM 4296/1186). Analysis of macrofossils from a cellar from the Early Roman Iron Age, Kærgård***

#### **Introduction**

A rescue excavation took place north-east of Højer (South-West Jutland) in 2010-2012 at HAM 4980, Kærgård (FHM 4296/1186)<sup>1</sup>. The operations have been directed by the archaeologist Anders Hartvig from Museum Sønderjylland.

Kærgård is located approximately 500 meters from Trælbanken, a circular defensive site from the Early Roman Iron Age (ældre romersk jernalder)<sup>2</sup>. It consists of a village of at least three farms. It is assumed that Kærgård and Trælbanken were occupied at the same time.

In 2012 the excavators found a cellar in one of the houses from the Early Roman Iron Age. Unfortunately a part of the preserved grain storage was already destroyed, but about 5 liters were still preserved and were collected for flotation.

#### **Sample treatment**

The flotation system consists basically in an inclined chute supplied with running water. As the water level rises, the organic elements in the soil, which are lighter than water, float and flow over the chute. They are caught in a textile net with a mesh size of approximately 0,25 mm. The textile net is hung to dry and the floated elements inside are ready for analysis as soon as they are completely dry.

The flotation was done by the company Scanflot and the samples sent to the Department of Archaeological Science and Conservation at Moesgaard Museum for analysis.

#### **Subsampling method**

Due to the big volume of the sample (4300mL) it has been subdivided prior to analysis. A subsample has first been taken with a beaker. While doing that it was given attention to sample from both the upper and

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<sup>1</sup> HAM 4980, Kærgård (FHM 4296/1186). Emmerlev sogn, Tønder kommune, Region Syddanmark. Sted-nr. 210202-94. UTM: 481312/6092627, zone 32

<sup>2</sup> The period of the Early Roman Iron Age is considered to have lasted from 1-160 A.D.

lower layers to avoid an overrepresentation of the bigger elements compared to the smaller parts. The material was then poured out to form a small “pyramid”. The “pyramid” was then subdivided several times into equal sections until obtaining a quantity of 133,6mL (1/36). The size of the subsample has been calculated to allow the analysis to be representative of the whole sample. To finish the subsampling process, the material was then poured into trays of different mesh sizes (2 / 1 / 0,5 / 0,25 mm), which were all analysed.

## Analysis and interpretation

The analysis of the sample has been conducted by B.A. Jérémie Gnaedig, intern at the Department of Archaeological Science and Conservation, Moesgaard Museum. The permanent staff of the Department supported him in all the steps of the process. An overview of the results is presented in the table in the attachment 1.

Almost the whole sample is constituted by cereals (96,2%, attachment 2)<sup>3</sup>. The rest is constituted by some seeds and a very small quantity of charcoal. The sample is very clean and contains only a few stones/sandgrains. The state of conservation is very good.

The majority of the cereals is represented by barley/byg (*Hordeum vulgare sp.*)(attachment 3). 2,8% of the sample could not be identified more precisely than being *Hordeum vulgare sp.*, but 96,2% has been identified as being *Hordeum vulgare var. vulgare* (avnklædt byg). *Hordeum vulgare var. nudum* (nøgen byg) has also been identified, but represents only 0,4% of the sample (N = 11). The presence of *Hordeum vulgare var. nudum* in very small quantity may be the result of a crop-rotation system or they may be regarded as weed in the other crops. Finding *Hordeum vulgare sp.* in a sample of this period and this area is not a surprise (Robinson, Mikkelsen & Malmros 2009, 128).

### Secale cereale (rug)

The presence of *Secale cereale*<sup>4</sup> (rug) in the sample is quite more surprising. It has not been found in big quantities (N = 7), but the identification is certain. According to the actual state of research, *Secale cereale* was introduced around 280 A.D. in southern Denmark according to the C-14 datings (Mikkelsen & Nørbach 2003). Therefore this could be the earliest evidence of cultivated rye in this area.

But during the analysis, the rye appeared only in the DP2-tray, indicating a size comprised between 1 and 2mm. Considering the small size of these grains in comparison with later specimens (Robinson 1991) and their small quantity in the sample they are interpreted as being weed seeds and not cereals. In other words the *Secale cereale* found in the sample was most probably wild and not cultivated.

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<sup>3</sup> Only the entire elements whose identification is sure have been considered in this statistical analysis. That means that the categories “fragments” and “cf.” (see attachment 1) are not evocated in this section.

<sup>4</sup> As already recognized in the pre-analysis executed by Peter Hambro Mikkelsen, Moesgård Museum.

## Conclusion

The sample from HAM 4980, Kærgård x399 is very clean and constituted mainly of *Hordeum vulgare* sp. The grains of *Secale cereale* identified were wild and not cultivated.

As a part of the cellar has been destructed the question of the representativity of the sample for the whole has to stay open. It is possible that the grain found in Kærgård was only a small part of a big storage.

Jérémie Gnaedig, B. A.

Afdeling for Konservering og Naturvidenskab

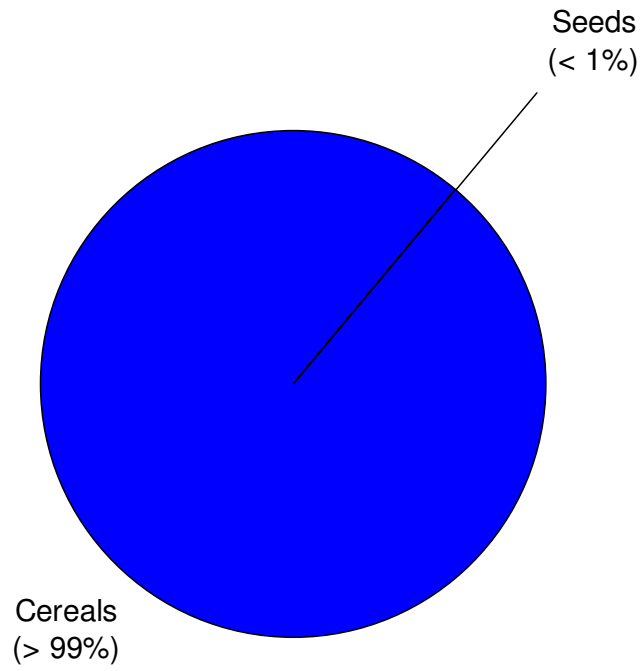
Moesgård Museum

## Attachment 1 / Overview of the results

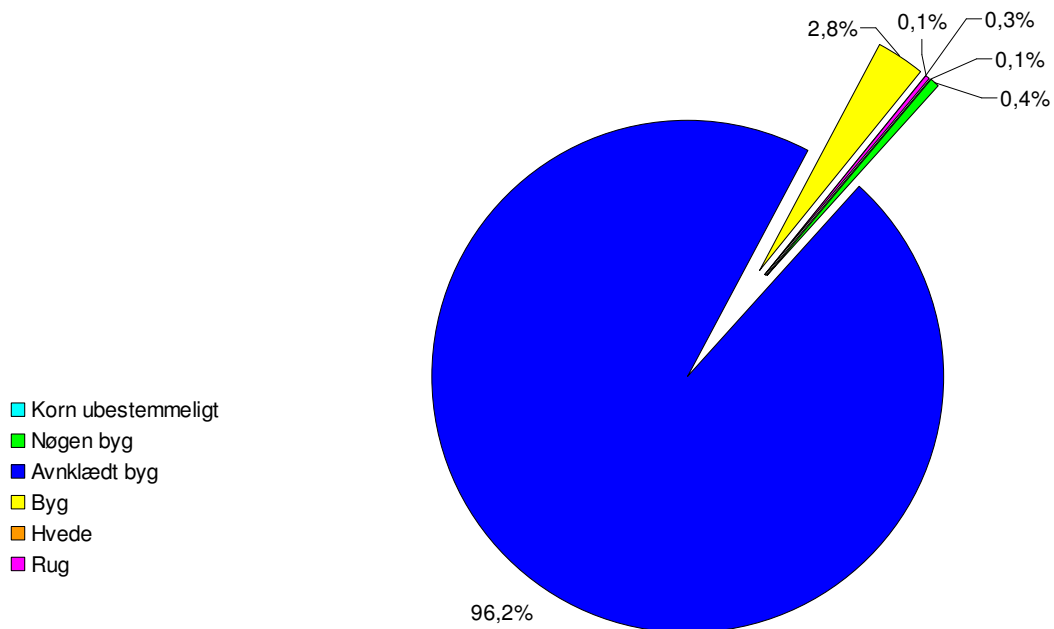
X-nr.	X-nr.	399
A-nr.	A-nr.	/
Floteret (ml)	Floteret (ml)	4300
Oprindelig jordprøve (liter)	Oprindelig jordprøve (liter)	5000

		DP1	DP2	DP3	DP4	DP5	Total
Korn ubestemmeligt	Cerealia indet	1	2	/	/	/	3
Korn ubestemmeligt (frag.)	Cerealia indet (frag.)	1010	3452	5644	/	/	10106
Nøgen byg	Hordeum vulgare var. nudum	10	1	/	/	/	11
cf. Nøgen byg	Hordeum vulgare cf. var. nudum	8	6	/	/	/	14
Avnklædt byg	Hordeum vulgare var. vulgare	2207	154	/	/	/	2361
cf. Avnklædt byg	Hordeum vulgare cf. var. vulgare	3	6	/	/	/	9
Byg	Hordeum vulgare sp.	65	5	/	/	/	70
Byg (frag.)	Hordeum vulgare sp. (frag.)	876	1219	/	/	/	2095
cf. Byg (frag.)	cf. Hordeum vulgare sp. (frag.)	849	1269	279	/	/	2397
Hvede	Triticum sp.	3	/	/	/	/	3
Hvede	Triticum sp. cf.	2	/	/	/	/	2
Rug	Secale cereale	/	7	/	/	/	7
Rug (frag.)	Secale cereale (frag.)	/	13	/	/	/	13
Gåsefod	Chenopodium sp.	/	/	1	/	/	1
Bleg-/Fersken-pileurt	Persicaria maculosa/lapathifolium	/	9	/	/	/	9
Gul Frøstjerne?	Thalictrum flavum?	/	6		/	/	6
Ubestemmelig frø	Indet	/	4	13	/	/	17
Sandslagge	Sandslagge	9	33	94	>150	>1000	>1000
Trækul	Trækul	<20	<50	>50	>200	>1000	>1000
Bemærkninger	Bemærkninger			Some roots have been found in the sample	Some roots have been found in the sample	Some roots have been found in the sample	

Attachment 2 / Amount of cereals and seeds



Attachment 3 / Type of cereals identified



## Attachment 4 / List of plants

### Cultivated and collected species

*Hordeum vulgare* L. Seksradet byg (nøgen + avnklædt). 60-120 cm høj. Højden kan have ændret sig på grund af avling. (Mossberg & Stenberg 2005)

### Identified plants

*Secale cereale* L. Almindelig Rug. Højde 50-150 cm. Højden har ændret sig på grund af avling, se f.eks. Tvengsberg 1995. (Hansen 1993)

### Plants difficult to distinguish

*Persicaria maculosa* L. Ferskenbladet Pileurt. 25-60 cm høj, omkring 200-800 frø pr. plante. Blomstrer og frømodner juli-september. Rent sommerannual (kan også forekomme i vintersæd, Melander 1998). Forholder sig som *Persicaria lapathifolium*. Agerjord, ofte vandlidende, ruderater. (Frederiksen et al. 1950, Hansen 1993, Jessen & Lind 1922)

og

*Persicaria lapathifolium* L. Blegbladet Pileurt. 30-60 cm (25-80 cm) høj, omkring 800-850 frø pr. plante. Blomstrer og modner frø i juli-september. Udpræget sommerannual plante. Kan være meget skadelig i vårsæden, især i lave noget vandlidende marker, hvor den kan forekomme meget talrigt, kan også forekomme i vintersæden. (Melander 1998, Frederiksen et al. 1950, Hansen 1993)

### Uncertain identification

*Thalictrum flavum* L. Gul Frøstjerne. 30-90 cm høj. Næringsrig, fugtig bund, rørsump, dyndeng og ellesump. (Hansen 1993)

### Plants identified by gene or family

*Cerealia* Korn

*Chenopodium* sp. Gåsefod sp.

*Triticum* sp. Hvede sp.

## Literature

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