Medieval Meals: preliminary results from a comparative analysis of Medieval-Renaissance latrines in Denmark

Mette Marie Hald[1], Morten Fischer Mortensen[1] , Jacob Mosekilde[2], Betina Magnussen[3], Martin Jensen Søe[4]

[1]National Museum of Denmark, [2]Museum of Copenhagen, [3]Center for GeoGenetic, Natural History Museum, [4]University of Copenhagen

Medieval Meals is an ongoing research project aiming at investigating diet during the Medieval and Renaissance periods in Denmark. This is undertaken mainly through the analysis of plant remains and pollen from 10 latrines from Zealand and Funen. This poster presents preliminary results from these analyses as well as animal bone and parasite egg analysis of one latrine from Copenhagen.

Edible plants

Analyses of plant remains and pollen show that a considerable component of the samples consisted of bran from cereals used for bread or porridge. A large variety of fruits, herbs, spices and nuts were also found. Many taxa were observed both as macrofossils and pollen, while other taxa were observed as only one or the other. It was found, therefore, that analyses of plant remains and pollen complement each other very well in a plant-economic analysis of latrines and a combination of these should be used in future studies.

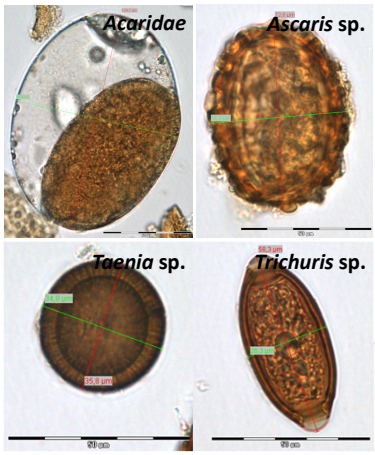
Fig	**Blackcurrant**	**Apple**
Flax	**Oat**	**Rye**
Hazelnut	**Damson**	**Mustard**
Raspberry	**Coriander**	**Dill**
Barley	**Cloves**	**Lemon/bitter orange**
Elder	**Grape**	**Cherry**
Hop	**Strawberry**	**Buckwheat**

Herring	**Perch**
Cyprinidae	**Plaice/flounder/dab**
Eel	**Cat**
Cod	**Pig**

Fish and mammals

Among the fish, saltwater species (herring, cod and plaice/flounder/dab), freshwater species (perch and cyprinid) and a migrating species (eel) have been found. Most of the bones represent herring and eel. Eel, flatfish and small cod could be caught near the coast, some of them in traps, while larger herring fishing would have been carried out by net fishing at sea. The perch and cyprinid could have been caught in one of the local lakes.

Mammals are represented by pig and cat. Both fish and pig were common household food products, while the cat was unlikely to have been on the menu. The small juvenile rib fragment shows that we are dealing with a kitten. A deciduous pig tooth (dP2) with no visible wear was also found in the latrine. dP2 erupts when the piglet is approximately 10 weeks old and it is exchanged by the permanent tooth when the pig is approximately 16 months old. As there is no wear on dP2, the pig was probably closer to the age of 10 weeks than 16 months.



	Acaridae	*Ascaris sp.*	*Taenia sp.*	*Trichuris sp.*
Top of latrine (91 g)	**3**	**38**	**1**	**1074**
Bottom of latrine (76 g)	**1**	**6**	**0**	**23**

Parasites

Parasite eggs from three different human intestinal worms were present:

•*Ascaris* sp., roundworm, infecting humans and swine through the consumption of unclean food,

•*Trichuris* sp., whipworm, probably the species *Trichuris trichiura*, which only infects humans. Like *Ascaris*, this takes place through the consumption of unclean food,

•*Taenia* sp., tapeworm, probably the species *Taenia solium* infecting humans and swine, or *Taenia saginata*, infecting humans and cattle. Both species infect humans through the consumption of raw meat.

Eggs of *Acaridae,* mite family, which are typically found in latrine deposits, were also observed.

The three intestinal worms were very common in Medieval Denmark and until the first half of the 20th century, showing that the introduction of latrines was not sufficient to get rid of intestinal worms, particularly *Ascaris* sp. and *Trichuris trichiura*. The three intestinal worms are no longer common in Denmark, however, due to the introduction of modern toilets and improved personal hygiene. The practice of cooking meat thoroughly and the increased focus on the welfare of animals raised for consumption has also played a role in the eradication of intestinal worms.

Food or packaging material?

Buckwheat husks are found in some latrines. Buckwheat was grown in Denmark in the 1600s, but was never an important crop. The husks could potentially represent the by-products of crop cleaning. However, buckwheat husks have been found in contemporary layers in Copenhagen inside the chambers of Dutch imported clay pipes. The husks are also well-known from Dutch shipwrecks, where they were used as packaging material in crates of clay pipes intended for export. Rather than representing food remains, therefore, we suggest that the buckwheat husks may have been present in the latrines as discarded packaging material, which had been swept into the latrine barrels along with other household refuse.

Seasonality?

The nuts, fruits and herbs found in the latrines could all have been eaten either fresh or preserved, i.e. dried, pickled or stewed for jam. The fish and mammals were available for catching/culling all year round, and were eaten either fresh or pickled. We have not, so far, picked up seasonal uses of the latrines and the diet of the time would have been resilient to seasonal fluctuations in food availability.

Local products or imports?

Most of the species can have been produced locally; fig and grape, however, could also been imported from further afield as dried products. Two plant species – both found as pollen - were definitely imported: myrtle family, Myrtaceae, probably cloves, Citrus family, probably either bitter orange or lemon. Cloves originate from Indonesia and must have arrived in the shape of the dried flower buds, a popular ingredient in Renaissance cuisine. Species of the Citrus family were also used very often in meals at the time and may have arrived in the country as dried peels.

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