

Insect fossils from Viking age and Medieval houses in Iceland - what can they tell us about life and environment?

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Few constructions, such as wells, outhouses or other peripheral buildings and features, which can be used for macrofossil analysis, have been excavated at Icelandic Viking age or medieval settlement sites. This is in opposite to many similar excavated settlements in Northern Europe. Therefore, a very common sampling environment in Iceland is from former house floors. But a house floor also means special taphonomical problems and is also of limited use in interpretation of the activities both inside the houses and for the surrounding environment. There is also the risk of redeposition and human interference on the cultural layer caused by human activities inside the house.

During the period 2000 to 2006 subfossil insect remains have been analysed from a number of house floor samples from the localities and former settlements of Viking age Bessastadir, Hofsstadir in Garðabæ, Eriksstadir, Breidavik, Kolkuos and Hólar in Hjaltadalur, the medieval turf houses at Keldur and from later historical house remnants in Hólar. Also, in order to understand the environment surrounding the settlement, natural deposits in the form of two mires were cored in 2001 at Hofsstadirmýri in Garðabæ and in the surroundings of Bessastadir.

One of the aims is to analyse the fossil insect remains, primarily beetles, for possible interpretation of the environmental conditions, the relation between a settlement and its surrounding nature, the indoor environment of the buildings and to compare the different settlements. There was an attempt to make a spatial analysis of the Bessastadir Viking long-house floor, to see the spread of insect remains, their relation to the building and the sediment and to test organic content of the sediment. In Hólar this idea is expanded and sampling has been expanded to spatial sampling from house floors, testing different sizes of sample volume as well as different parts of the cultural layer and working with different sampling spots in different rooms in the houses. The close connection between field archaeology and different methods used in the Hólar project open up many opportunities to develop the understanding of human settlement, the surrounding environment and the cultural deposits investigated during archaeological excavations.

The majority of samples from house floors from the different sites are generally poor in fossil insect remains, but the results show a domination of beetles living on plants in the surrounding environment. These beetle species are not synanthropic (living in close association with the human and human settlement) and they were probably generated from the building material in the roof and are therefore direct indicators of the surrounding natural environment and the building phase. The typical secondary use of abandoned houses is also obvious at Hólar in floor samples from the 18th and 19th centuries, where hay and manure are found together with beetles connected to this and similar kinds of indoor environments. In the last stage, the houses were used as stables for horses and sheep before being abandoned.

To the contrary, the early medieval settlement at Keldur is generally rich in insect remains and the composition of the beetles is in some parts very synanthropic. The most synanthropic samples are probably deposits of waste within the medieval house representing periods when a part of the house has been used as smithy or for metal work. Partly because of macroscopic finds of iron fragments as

well as the presence of synanthropic beetle species living in houses with lower temperatures and moist conditions, but not found outdoor in the surrounding natural environment.

Since the situation is so special in Iceland, it is important to learn more about the houses of different periods, the floor sediments and how to use them. One of the main difficulties with house floor samples is the degree of preservation of the subfossil remains and content of fossil remains, which are totally dependent on the house history, *e.g.* its location in the landscape and the material used during its construction, the function of the house or activities in different rooms and finally the abandonment history of the house. But the floor sample usually provides a high preservation degree and high organic content in the sediment. From a taphonomical point of view it is also important to identify parts of the subfossil insect that is connected to different parts of the building and building material, like roof material or the turf used for the walls.

In Hólar one goal is to test and develop different methods and to develop the understanding of the settlement and houses from subrecent periods back to the Viking Age. A primary aim is to follow the archaeological work through sampling and analysis at every step during the progress of the excavation and back in history. This is an important work for the development of the methods used for archaeological samples in Iceland which leads to a better understanding of the Icelandic settlement and the surrounding environment. The opportunity of close cooperation between disciplines is providing good possibilities for progress and to build a model through Icelandic example for future archaeological work in all the Nordic countries.

The work within the Hólar project (Hólarannsóknin) will proceed and get evaluated during coming years. Other constructions should also be explored and natural deposits will be cored to get more understanding of the surrounding natural landscape in relation to the human settlement.