ÞVERÁ, LAXÁRDALUR

Preliminary Report on a Sampling Project for an Ethno-Archaeoentomological Investigation

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1. Background to the project

Insect remains preserved in archaeological floor deposits contain a wealth of information about past ecological conditions. Insects are known to exploit almost every conceivable habitat, including not only natural environments but also habitats created by humans (Kenward 2009, 5-6). Many species have very particular ecological requirements. Some are adapted to exploit materials and conditions only occurring in human-made buildings, while some can only complete their developmental cycle in natural environments. Some require low temperatures; some can only survive in warm climates or indoors. This makes preserved insect remains excellent proxies for past environmental conditions (Elias 2010, 39).

Remains of beetles began to be used in climatic and environmental reconstructions soon after it was scientifically proven that most species did not evolve over the last 30 million years (Coope 1978, 185). Their potential in archaeological interpretation was also realized, and the first studies of insect remains from archaeological sites were published towards the end of the 1960s (e.g. Coope & Osborne 1968; Osborne 1969, 1971, Stafford 1971). Since then, numerous archaeological projects included the study of insect remains in their agenda. The geographical scope of archaeoentomology nowadays includes western Europe (e.g. Allison *et al.* 1991a; 1991b; Buckland *et al.* 1996; 2009; Hall & Kenward 1990; 2004; Hellqvist 1996; Kenward & Hall 1995; Panagiotakopulu *et al.* 2007; Ponel *et al.* 2000; Vickers *et al.* 2005), the Near East (Kislev & Simchoni 2007; Panagiotakopulu 1999; 2001; Panagiotakopulu *et al.* 2009) and Eastern North America (Bain 1998; 2001; Bain & Prévost 2010).

Archaeoentomology has also been applied to the study of Icelandic archaeological sites (e.g. Amorosi *et al.* 1992; 1994*;* Buckland & Dugmore 1991; Buckland & Perry 1989; Buckland *et al.* 1991a; 1991b; 1992; 1995; 2009; Forbes *et al.* 2010; Konráðsdóttir 2007; Perry *et al.* 1985; Sveinbjarnardóttir *et al.* 2007). Such investigations involved ecological reconstructions which allowed the identification of activity areas and of imported resources (for example peat, seaweed and turf) within inhabited buildings, as well as the evaluation of past sanitary conditions. Those studies contributed not only to the reconstruction of past economies and environments, but also to a better understanding of the changes in the Icelandic insect fauna through time.

Even though some insect taxa may be considered clear indicators for some material and activities - for example sheep ectoparasites as indicators of residues from wool processing (e.g. Buckland & Perry 1989) and grain pests as indicators of stored cereal and their by-products (e.g. Levinson & Levinson 1994) - a large portion of the taxa commonly found in

archaeoentomological assemblages cannot be used in ecological reconstruction in such a straightforward manner. Insect assemblages recovered from Icelandic archaeological sites are generally dominated by synanthropic insects associated with organic matter, ranging from dry hay type residue to fouler material such as manure. The differentiation of both types of materials is important as it might allow the distinction between poor and good sanitary conditions or between human and animal dwellings (Carrot & Kenward 2001, 887-888; Kenward 1982, 72). However, the information available in the literature about these species' biology is often limited to references to casual captures, or is incomplete and devoid of precise ecological parameters (Carrot & Kenward 2001, 887-888; Kenward 1982, 72; Perry *et al.* 1985, 37). Most collection and surveys of insect faunas do not include precise quantification, both of species and habitats, and this seems especially true when the insects studied are not considered as having an obvious medical or veterinary importance (Kenward 1978, 3; 1984, 1).

A number of studies of insect remains from Icelandic sites have been successful in distinguishing faunas derived from habitations floors, stable manure, middens, or from imported resources such as peat (e.g. Amorosi *et al.* 1992*;* 1994; Buckland *et al.* 1991a; 1992; Forbes *et al.* 2010; Perry *et al* 1989). One of these studies employed numerical techniques to identify groups of co-occurrent species in assemblages in order to distinguish different types of deposits (e.g. Perry *et al.* 1985). However, most of these studies were based on information generated from previous archaeoentomological work and from information available in the literature. Studies conducted in the UK, the cradle of archaeoentomology, benefited from useful information regarding the formation processes of archaeoentomological assemblages, obtained via a series of studies of modern death insect assemblages (Kenward 1984; Kenward *et al.* 1984; Osborne 1983, Smith 1996; 1998; 2000; Smith *et al.* 2005). No such studies have been undertaken in Iceland and the wider North Atlantic region, and therefore much is assumed from experience in the British context.

There is reason to believe that the archaeoentomological signature for particular activities or ecological conditions would differ between countries, the archaeological record inevitably being influenced by cultural and environmental factors unique to a place. Milek (2006, 35) defined it thus: 'there were many cultural and environmental factors unique to [Iceland] that could have had an effect on the formation and preservation of archaeological floor deposits'. Therefore, archaeoentomological reconstructions of past activities and ecological conditions on Icelandic sites would benefit from a comparison with death insect faunas recovered from floors layers created as the results of known activities.

The objective of the present project is to test the visibility of activity areas in the Icelandic archaeoentomological record. This is achieved through the study of insect remains preserved in floor layers which formed in the rooms of the still standing 19th century turf house at the site of Þverá in northeast Iceland. The comparison of the insect faunas preserved in these floors with the actual room functions will hopefully shed light on the types of activities practiced in 19th century Icelandic households which can be detected using preserved insect remains. The study will also potentially reveal useful information pertaining to the floor formation processes which may influence insect assemblages forming into floor layers. The

results of the present study will be compared to the results of a geoarchaeological study previously conducted at Þverá, which had investigated floor formation processes in the main dwelling house and one of the sheephouses using soil micromorphological analysis, and which had identified a number of activities related to the use and cleaning/maintenance of the rooms that had left a sedimentological signature in the floor deposits (Milek 2006; Milek forthcoming).

The purpose of this report is to present details about the fieldwork which had been conducted at Þverá in the summer of 2010. The project at Þverá forms part of a doctoral thesis, which aims at developing an analytical framework, based on the study of insect remains, for the reconstruction of past daily life in 19th and early 20th century Iceland. This research is being undertaken by Véronique Forbes at the University of Aberdeen, under the supervision of Drs Karen Milek and Andrew Dugmore (U. Of Edinburgh).

2. Þverá: a 19th-century farm

The site of Þverá is located in northeast Iceland in a valley called Laxárdalur (fig. 1). The site is the location of the parish church and was originally a functional farm practising sheep and cattle farming. Since 2009, animals are no longer kept at the site and farming activities are limited to the cultivation of hay. The foundation date of Þverá is unknown, but the gabled turf farmhouse which was inhabited by the past occupants of the site from 1852 to 1960, when a new concrete house was built c. 70 m to the south, is still standing (fig. 2) (Milek 2006, 38). Two abandoned sheep houses, as well as the ruins of an ancient hay barn, are also present 40 to 70 metres away from the farmhouse (fig. 3).

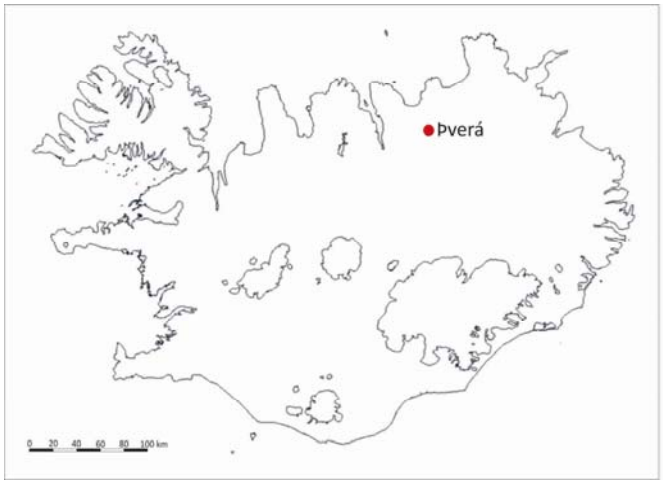

Figure 1. Map of Iceland showing the location of Þverá.

Figure 2. Photograph of the 19th century house.

It is the 19th-century farmhouse and its two associated sheep houses which are the focus of this study. The residential building consists of a gabled turf farmhouse, a type which was in fashion in 19th-century Iceland (Ólafsson and Ágústsson 2000). Such houses normally had turf walls with stone foundations, turf and brushwood roofs as well as a wooden indoor frame (Jóhannesson *et al.* 1987, 88-98; Ólafsson and Ágústsson 2000). They were composed of various rooms which commonly included a *baðstofa* (where people slept, ate and worked), a hall, a kitchen, pantries (*búr*) and/or other storage rooms (*skemma*). At Þverá, two parlours are located on each side of the hall in the front part of the house, while the kitchen, pantry and fuel store are located in the centre and can be accessed through a narrow corridor. This corridor also leads to the *baðstofa* at the rear of the building. A cattle byre and a milk store, through which a stream has been channelled, are connected to the kitchen by another corridor, also leading to an exit through the northern wall. When Þverá's occupants acquired a coal stove in the 1880s, they dug into the northern part of the turf wall located between the outer pantry and the *baðstofa* in order to build a new kitchen. Most of the rooms in the house have earthen floors, except the *baðstofa*, the two parlours and parts of the byre where there is timber floor boards.

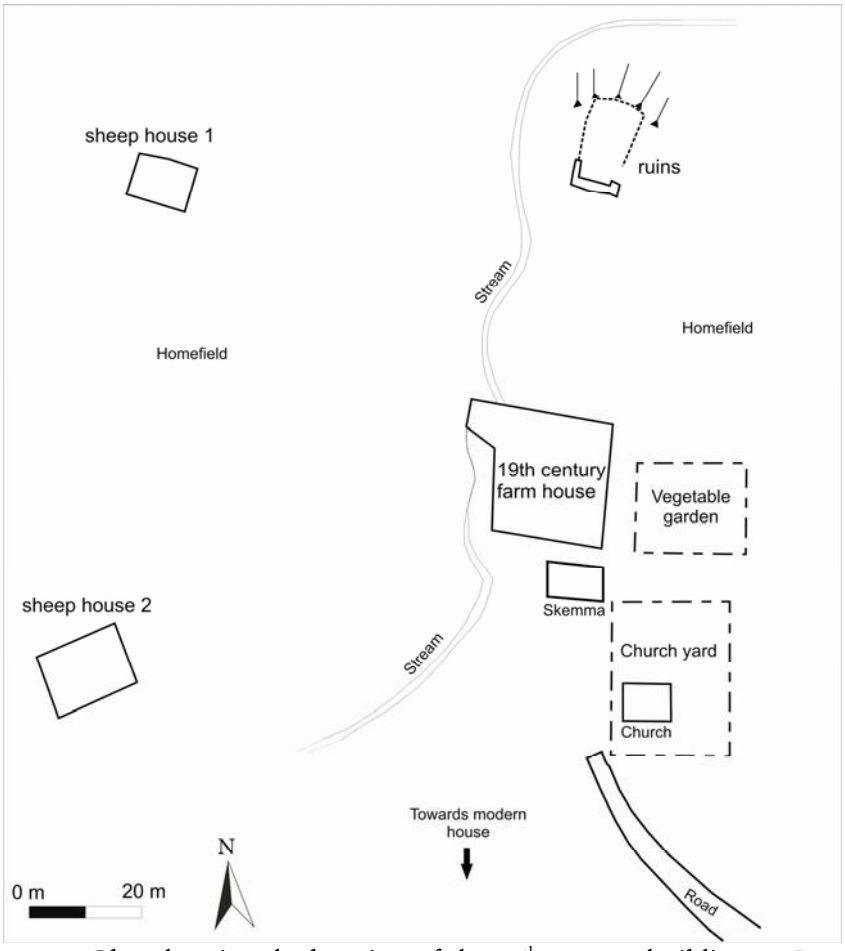

Figure 3. Plan showing the location of the 19th century buildings at Þverá.

The outbuildings which were part of the 19th-century farmstead are still present at Þverá but some of them are collapsed. About forty metres north of the dwelling house lay the ruins of one of these buildings, which served as a sheep house and a hay barn. The *skemma*, located just south of the main house, collapsed after the abandonment of the main dwelling but was recently rebuilt. Sheep house 1 (fig. 4), located northwest of the house, had been abandoned over the previous 50 years and most of the roof and parts of the walls are now collapsed. Sheep house 2 (fig. 5) was only abandoned in 2009 and is still in good condition. The front of this building is divided in two sheep houses, each with a feeding trough. A hay barn is attached to the rear of these buildings.

Figure 4. Front of sheep house 1 facing southwest.

Figure 5. Front of sheep house 2 facing northeast.

After the gabled turf house stopped being used as a dwelling in 1960, the occupants of Þverá used part of it for storage. In 1965, it was taken over by the National Museum of Iceland. The partially collapsed smithy was then rebuilt and debris which accumulated on the floors of the house since its abandonment were removed. Áskell Jónasson, who was born at the site in 1938 and still lives there, was then appointed to take care of the repair and maintenance of the walls and roofs while disturbing the house as little as possible. Fresh turves were laid on top of the floors, protecting them from disturbance which could have been caused by the trampling of occasional visitors (Milek 2006, 39). The fact that the original floor deposits in these buildings remained practically untouched since their abandonment provides a unique opportunity to examine floor sediments and the biological remains preserved in them.

3. The sampling campaign at Þverá

The fieldwork at Þverá was undertaken by the authors from the 27th to the 29th of August 2010. The objective was to obtain sediment samples from floors in order to examine the insect faunas preserved inside them. In order to do so, shallow sampling trenches measuring 50x50cm were excavated inside the main residential building and the two abandoned sheep houses. Most of the samples were of a volume of 4 L, and to allow the collection of enough sediment some of the trenches needed to be extended up to 50x80cm. Only deposits identified as being floor layers were sampled (although there are also few exceptions, for example S-21 is believed to come from a deposit associated with debris from roof repairs). Superficial layers, mostly originating from the turf laid over the original floors, were also excavated but not sampled. Single context recording was used throughout the fieldwork, where each different context was attributed a number and excavated separately. In an attempt to collect samples from layers which formed contemporarily and to limit the disturbance of the floor sediments, only the most recent floor deposits were excavated and sampled. A square of plastic film was left at the bottom of each sampling trench, and each trench was filled up with sediments at the end of the excavation to protect the layers below. All sediment samples were collected using clean tools and stored in hermetically sealable plastic bags.

It was hoped that the project would allow the investigation of insect faunas preserved in occupation floors from all different rooms or activity areas contained in the farm of Þverá.

However, some of the rooms of the turf house had well-joined timber floors and it was not possible to access the sediment underneath them. This was the case in the parlours, which served as guest rooms, and which were not sampled as part as this study. It was possible to lift floor boards in the bedroom (*baðstofa*) to sample sediments that filtered through them. The only other rooms of the turf house which were not sampled were the entrance room, the corridor between the kitchen and the byre, and the smithy. The latter has not been sampled because the interior had been modified during its reconstruction in the 1960s, and previous investigations there by Karen Milek had determined that the original floor layers associated with the use of the smithy had been removed. A total of ten sampling trenches were excavated inside the turf dwelling house and their location is shown in figure 6. Two more sampling trenches were placed inside the two abandoned sheep houses: one in a sheep enclosure and one in a hay barn. Figure 7 presents the plans of the sampling trenches at the end of the excavation.

The following section provides a brief description of the excavated deposits and their interpretation. Detailed descriptions of the deposits sampled during fieldwork can be found in the appendix, which includes the registers of all recorded contexts, samples and finds. All archaeoentomological samples were shipped to Scotland, where they are stored in the geoarchaeology laboratory of the University of Aberdeen. The few finds which were collected from these layers are currently stored at Fornleifastofnun Íslands, after having been cleaned and described.

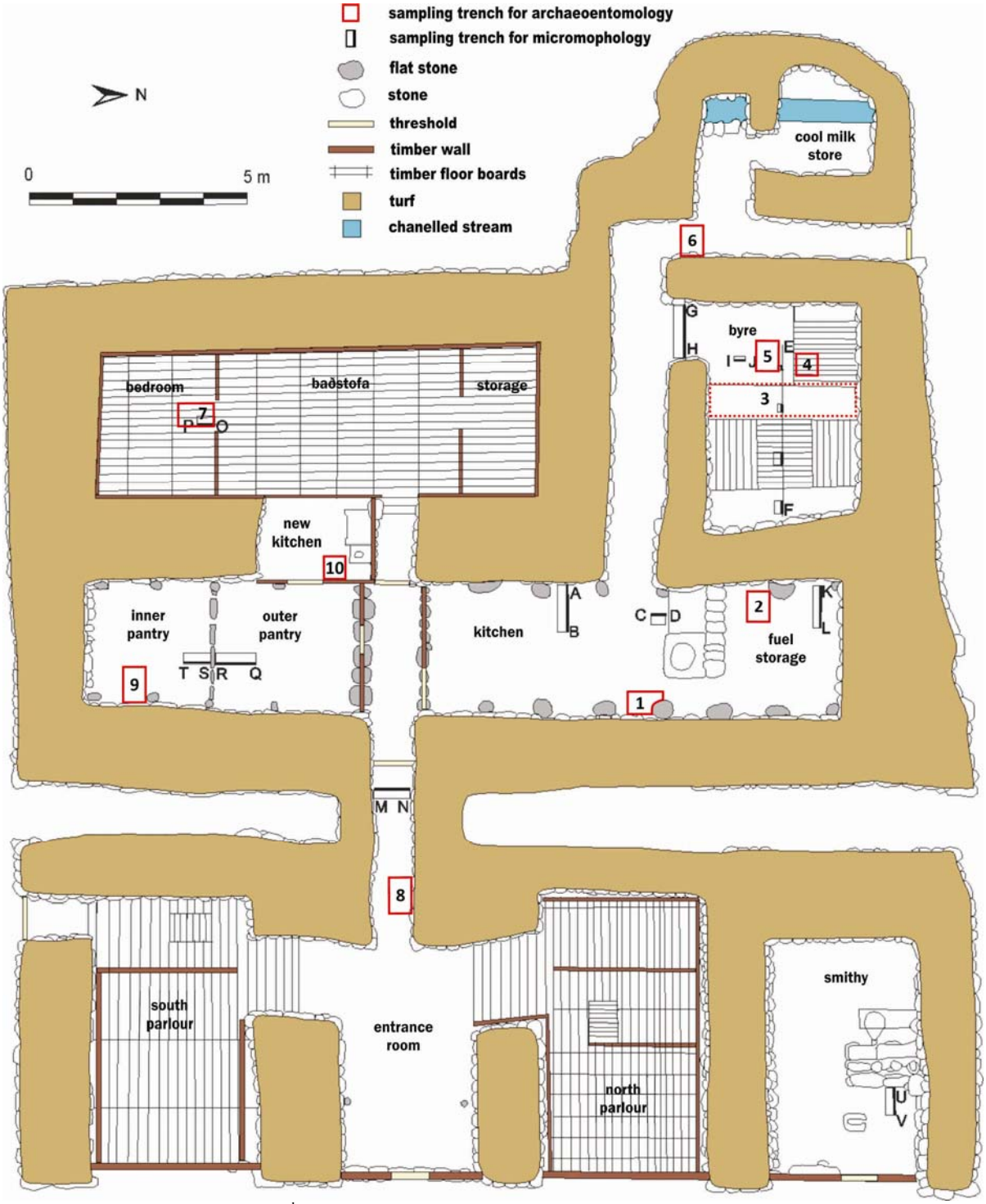

Figure 6. Plan of the 19th-century house showing the location of the trenches sampled for archaeoentomological analysis (red) in relation to the trenches previously sampled for soil micromorphological analysis (black) (adapted from Milek 2006, 47).

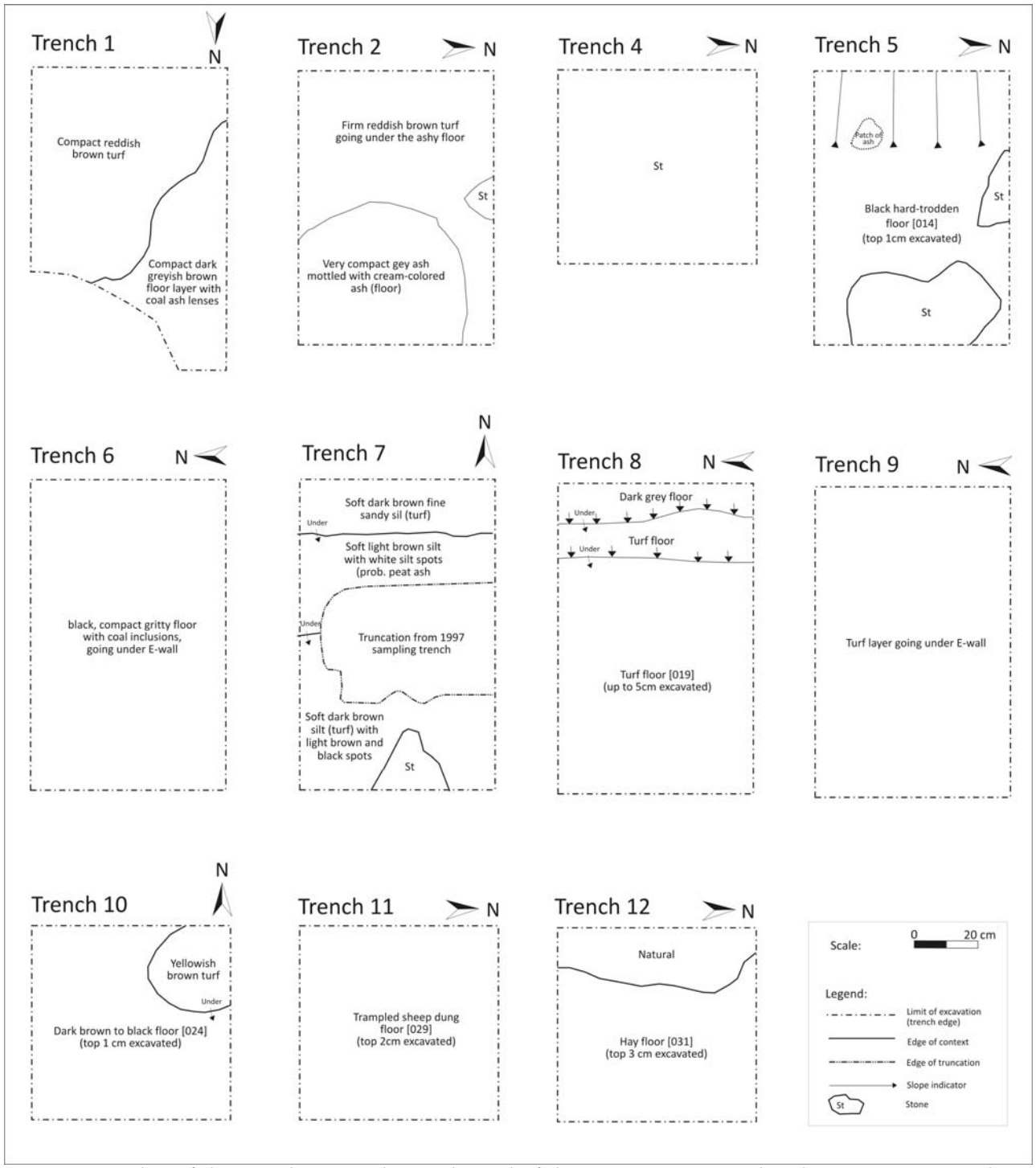

Figure 7. Plan of the sampling trenches at the end of the excavation. Trench 3 does not appear in the figure because it consisted only of loose sediment accumulated on the bottom of a stone drain.

Sampling trench 1: the old kitchen

The 'old kitchen' used to be where food was cooked and prepared, but after the introduction of a coal stove in the 'new kitchen' in 1880 it served mainly for food storage while the old hearths were used for washing (Milek 2006, 52). The sampling trench in the old kitchen was located by one of the wall as this area would have been less trampled. Four contexts were excavated in this trench. Context 1 was the uppermost layer, probably corresponding to the remnants of the turf which had been laid on top of the original floors. Below it was context 2, a layer of a similar composition but also containing occasional clumps of hair, and which thus could be a floor layer. This layer was sampled (S-1). Two more contexts were excavated and these definitely correspond to successive floor layers. The uppermost one (context 3) contained coal, burnt bone, twigs and peat ash inclusions. Context 6 was more compacted and was composed of silt with 50% ashy lenses. Both of these floor layers were sampled (S-2 and S-3). We stopped excavating after the removal of context 6, which revealed two more layers probably representing earlier floors (see fig. 7).

Sampling trench 2: the fuel store

The second trench was placed in the area at the back of the kitchen, which had served for the storage of fuels, which included sheep dung, peat, brushwood and coal (Milek 2006, 55). The uppermost layer (context 4) was composed of loose organic material probably containing fuel residues. Three finds were recovered from this layer: one fragment of glass from a bottle and a jar and one piece of sheet metal. Underneath context 4 was a firm to compact floor layer (context 5), which began c. 20 cm away from the W-wall. The layer contained ash and twig inclusions, probably remnants of the stored fuel. Two window glass fragments and two glass vessel fragments were found in this layer. Below this layer was context 7, a dark organic floor layer, probably made of peat, which contained few small twigs. This layer was only located in the SE quarter of the sampling trench and was only 1-2 cm thick. A complete iron handle was recovered from this context (fig. 8). The last layer to be excavated in this trench was only located in the W-edge of the area. It consisted of an un-compacted organic floor with coal inclusions, probably mostly composed of peat. This layer was 9-10 cm thick. Context 7 and 8 were bottomed by two layers, a firm turf floor and an ashy floor (see fig. 7).

Figure 8. Iron handle recovered from context 7.

Sampling trench 3: the drain of the cattle byre

Three sampling trenches were placed in the cattle byre, where there was room for up to five cows. However, a new wall had been built c. 1900 between the byre and the passage way and

additional stalls had been removed (Milek 2006, 59). The first trench we excavated in this room was sampling trench 3, which consisted in the drain located in the center and which originally served to collect dung and urine (see fig. 9). Four litres of loose humose silt that had accumulated between the stones on the bottom of the drain were collected (sample S- 8). These sediments contained grass fibres and a few twigs.

Sampling trench 4: the wooden floor in the cattle byre

A sampling trench was placed underneath the wooden floor boards in the northwestern corner of the cattle byre (see fig. 9). The sediment was extremely organic and composed of hay remains with a high content of decayed wood originating from the floor boards. It is possible that this layer corresponds to an older wooden floor, the wood being in an advanced state of decomposition. This layer (context 10), which was the only one excavated in this trench, was 2-3 cm thick and was bottomed by a very large flat stone (see fig. 7). A single sample was taken from this context (S-9).

Sampling trench 5: the earthen floor of the cattle byre

A third sampling trench was placed in the cattle byre, in the hard-packed earthen floor west of the drain (see fig. 9). Two floor layers were excavated there. The first one (context 11) was very compact and multi-laminated, but less so on the western edge of the trench, where it was also thicker (up to 2 cm). It was composed of very organic silt, from which one sample was taken (S-10). This deposit had a very sharp boundary with the layer below (context 14) which contained a flat stone in its NE corner. Context 14 was also a very compact and organic floor devoid of inclusions. Only 1cm of the layer was excavated to allow the collection of a sediment sample (S-11). The thickness of the layer is unknown, but it was more compact in the centre of the trench than it was close to the western edge.

Figure 9. Photograph of the western part of the cattle byre showing the location of sampling trenches 3 (the drain on the right), 4 (top) and 5 (bottom). Camera facing

Sampling trench 6: the corridor leading to the cool store

The corridor linking the kitchen, the cattle byre and the cool store had not only been used by Þverá's inhabitants but also by their cows, which used the exit through the N-wall (see fig. 6). A sampling trench was placed there to verify whether the passing of cows may have left particular traces in the floor deposits in this corridor. The first context (12) excavated in this trench consisted of the remnants turf used to cover the floor, and this layer was only present up against the E-wall. The material was composed of loose and friable humose silt and was c. 1 cm thick. Underneath it was another layer of humose silt, this time probably corresponding to the original turf floor of the corridor. This layer contained a few inclusions of burnt bone fragments and wood chips. The layer was attributed two different contexts numbers, but probably corresponds to the same floor. The eastern portion of the layer, laying against the wall, was made of looser sediment than on the opposite end. The eastern portion of this floor layer correspond to context 15 and the western portion, to context 13. A sample was taken from each of these contexts (S-12 and S-14 respectively). The whole floor layer was excavated, and turned out to be 1-3 cm thick. Its removal revealed a compact black floor (see fig. 7) which seemed to continue under the eastern wall and thus probably corresponds to an earlier phase of the building.

Sampling trench 7: the bedroom (*baðstofa*)

Figure 10. Photograph taken in the *baðstofa* showing the location of sampling trench 7. Camera facing south.

The seventh sampling trench was located in the bedroom, in the southern side of the *baðstofa*. It was placed in the sediments c. 10 cm below the wooden floor boards (fig. 10). The first context (16) to be excavated was composed of very soft and loose sandy silt, which contained bits of decomposed paper, wood chips and white ash flecks. The context had been truncated in the middle of the trench by the sampling trench excavated by Karen Milek in 1997 to collected micromorphology samples. Two samples were collected from this context (S-13 and S-17). A number of finds were recovered from these sediments: three buttons, two nails, one vessel glass fragment, three pieces of wooden objects and seven pieces of paper. Below this layer was another accumulation of dust (context 20), this time light reddish and yellowish brown and with few wood chips inclusions. This layer was 2-3 cm thick and also truncated by the 1997 sampling trench. A sediment sample was collected from this context (S-18). The removal of context 20 revealed a series of deposits composed of soft silt, which were again truncated by the 1997 micromorphology sampling trench (see fig. 7).

Már Viðar Másson told us that there used to be a coal stove in the bedroom and an oil stove in the *baðstofa* some years before the house was abandoned. As the boundary between contexts 16 and 20 was very sharp, and as the first one was darker than the latter, it seems plausible that the first one (16) contains coal dust and probably formed after the introduction of a coal stove in the house. The one below probably contains turf dust and/or dust originating from the burning of different fuels. As the family living at Þverá made the acquisition of a coal stove in the 1880s, this would mean that context 20 would have accumulated prior to this date. Context 16 is probably contemporary with the use of the new kitchen.

Sampling trench 8: the main corridor

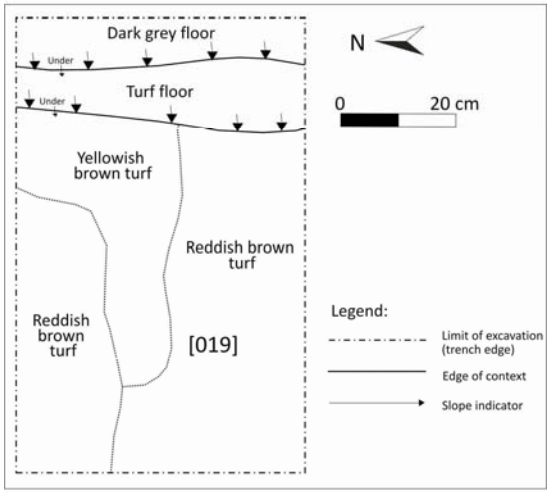

Figure 11. Plan of trench 8 after the removal of context 18.

A sampling trench was placed in the main corridor connecting the entrance to the living quarters of the house, i.e. the kitchen, the pantry and the *baðstofa*. The uppermost layer, context 17, was composed of turf and 3 cm needed to be excavated to reveal the first floor layer (context 18). This layer was a dark brown turf floor containing slag, charcoal and un-burnt bone inclusions. It was compacted and had a platy structure in the southern part of the trench, which corresponded to the middle of the corridor, but was firm and friable in northern edge. A sample was collected from this layer (S-15). The removal of context 18, which was barely 1 cm thick, revealed the edges of two superposed turf layers resting on top of a possible ashy floor deposit. According to Áskell Jónasson, because of the heavy traffic in the corridor, the floor had to be repaired with soil and ash, and it had to be covered with a fresh turf layer about once a year (Milek 2006, 50). Thus, these two turf layers probably derived from the maintenance of the floor. The top turf layer (context 19), which has been sampled (S-16) and partially excavated, was very mottled (fig. 11). Only the top 5 cm were excavated so the total thickness of the layer is unknown (see fig. 7).

Sampling trench 9: the pantry (*búr*)

A sampling trench was placed by the eastern wall of the inner pantry. This part of the pantry used to serve for the storage of foodstuffs and butter churn, while the outer pantry was mainly a working area (Milek 2006, 57). The top layer (context 21) was composed mainly of soft and loose silt, with a high content of wood chip fragments and also some artefacts: a nail, two pieces of sheet metal and one wood pin (fig. 12). This layer probably contains debris originating by the repair of the roof by Áskell Jónasson. As it may contain insects faunas associated with the materials used for roofing, this layer was sampled (S-21). This context was bottomed by a layer consisting of compact humose silt with leached lenses (context 25), which obviously consisted of turf as the material was still holding together and was removed by simply cutting around the edge of the trench and lifting it up. It no doubt corresponds to the

Figure 12. Wooden pin recovered from context 21.

turf layer which had been laid on top of the original floors. After its removal a possible floor deposit was revealed (context 26). The layer was compact, dark brown, 1-2 cm thick and contained a few wood inclusions. A sample was taken from it (S-22). Context 25 was bottomed by two different layers. The uppermost layer (context 32) only began c. 40 cm away from the eastern wall and was 2-4 cm thick. It consisted of a compact floor layer with a high content of ash. The layer was sampled (S-26). The reason why this floor layer did not reach the wall may be that, originally, there had been some furniture or some barrels placed by the wall. Once context 32 was removed, it revealed a layer of light brown compact turf which seemed to be going underneath the eastern wall (see fig. 7).

Sampling trench 10: the new kitchen

As explained above, a new room was cut out from one of the turf walls in the 1880s in order to place the new coal stove there. A sampling trench was placed in this new kitchen. The uppermost layer (context 23) was composed of very soft and loose silt with inclusions of wood chips and hay. Underneath it, a black floor layer (context 24) was revealed. It was very compact and hard-trodden in the western half of the trench, but rather firm and friable by the eastern wall, where it would have been left un-trampled. The layer contained a few birch twigs and lenses of turf and ash. It was 3 cm thick in the SE corner, where the bottom was reached and revealed a yellowish brown turf layer underneath (see fig. 7). A depth of only 1 cm was excavated on the western edge to allow the collection of sample S-20.

Sampling trench 11: the sheep house

Figure 13. Photograph of sampling trench 11 after the removal of context 28.

Then eleventh trench was placed inside the abandoned and partially collapsed sheep house 1, in its southwestern corner. The first context to be excavated (context 27) was turf collapse, probably originating from the roof as it contained bits of structural timber and birch twigs. Underneath was a 3 cm thick floor layer (context 28), which corresponded to the use of the sheephouse, as it was formed of humose silt, a mixture of trampled sheep dung and laid turf. Sample S-23 was collected from this layer. Context 28 was overlying another floor layer (context 29), this time uniformly composed of trampled sheep dung. Two cm of this layer were excavated to allow the collection of a sample (S-24), but the bottom was not reached (see fig. 7).

Sampling trench 12: the hay barn

The last sampling trench was placed in the hay store located at the back of sheep house 2. The trench was placed in the northwest corner, about 1m from the northern wall and 60 cm from the western wall. The first context to be excavated (30) consisted of loose material containing a lot of grass fibers and also a few birch twigs. It had a sharp boundary with the next layer (context 31), which consisted of a hay floor. This layer was firm and composed of humose silt containing a lot of grass fibres, probably remains from the hay which was originally stored there. Three cm of the layer were excavated but the bottom was only reached in the western edge of the trench, where the deposit had a sharp boundary with the natural andosol below (see fig. 7). Sample S-25 was taken from the hay floor layer.

Figure 14. Photograph of the northwest corner of the hay barn in sheep house 2 showing the location of sampling trench 12. Camera facing north

4. Current status of the analysis

A total of 26 sediment samples were collected at Þverá. In order to retrieve insect remains from these samples, they will be submitted to a process called 'paraffin floatation' (see Kenward *et al.* 1980 for a thorough description). The technique involves the disaggregation of the sample in water, which is then cleaned of silt and clay by passing it through a 300µm-mesh sieve. Then, the remaining content of the sample is mixed with its equal volume of paraffin, after which water is added to the mixture. Since paraffin has a lower density than water and preferably bonds to insects' exoskeletons, the coated insect remains float to the surface when

the solution is left to stand. These remains are collected by pouring this floating material over a sieve, which can then be stored in ethanol or left to dry. The archaeoentomologist has to examine this material (generally referred to as 'flot') under a low power (10X) binocular microscope in order to retrieve and identify insect remains.

Before the beginning of the analysis of samples from Þverá in the laboratory, samples were classified in order of priority. At least one floor sample from each trench was designated high priority, and these are treated first. It was decided to process a 2 L subsample of each sample, as this quantity may be enough for the retrieval of substantial insect assemblages. So far, six subsamples have been processed and three have been sorted. The three samples sorted yielded more than 100 insect individuals, and their preservation condition is excellent. Even though it is not yet possible to provide a preliminary interpretation of the results, as the insect remains retrieved have only been partially identified, the samples analyzed so far yielded substantial insect assemblages and there seems no doubt that the objectives of the project will be achieved.

5. Acknowledgements

The authors are grateful to Áskell Jónasson and the National Museum of Iceland for allowing us to work in the 19th-century house and outbuildings at Þverá, and for providing Karen Milek with such detailed information about the use of space and maintenance activities in the house. We are also most grateful to Már Viðar Másson for providing us with useful information about changes in the use of space and the arrangement of the rooms in the house. Many thanks are due to the people who helped with the logistics of this project, especially Garðar Gudmundsson, Mjöll Snæsdóttir and Unnsteinn Ingason. This study was made possible through the financial support of the Commonwealth Scholarship Commission and the Research Budget of the Department of Archaeology at the University of Aberdeen.

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7. Appendix

7.1 Context register

Context	Sampling trench	Interpretation	Description	Date
1	1 (kitchen)	remnants of turf layer that was covering the floor	very loose, friable, silt with common fibrous inclusions and roots, 1 cm thick, sharp boundary	27.08.10
2	1 (kitchen)	possible floor deposit made of turf	firm, friable, reddish brown, silt with fibrous plant inclusions and occasional clumps of hair, thin by W esnt of trench but up to 10 cm by the wall	27.08.10
3	1 (kitchen)	ashy floor of kitchen	firm, friable, dark greyish brown, silt with 5% burnt coal cinders, 1% burnt bone, <0.5%, 1% burnt peat fragments in SE corner, 1 to 3 cm thick, finds: ceramic	27.08.10
4	2 (fuel storage area)	Probable upper floor layer containing fuel residues	Very soft, loose (turf), reddish brown humose silt with 10-12% woody branches, bark, etc. Finds: bottle glass, sheet metal, 1 cm thick	27.08.10
5	2 (fuel storage area)	trampled floor containing fuel residues and ash	firm to compact, platy (flaky) structure, mottled reddish brown and black, with c. 20% cream-coloured inclusions (ash), humous silt (reddish brown: turf) and silt (black to very dark brown), with c. 10% woody twigs, finds: 2 frags of window glass, and 2 frags of vessel glass	27.08.10
6	1 (kitchen)	floor deposit with peatash on E-side of trench	firm to compact, flaky, brown with pinkish brown (peatash), sitl with peatash lenses (50%) and coal ash (15%), 1 to 5 cm thick	27.08.10
7	2 (fuel storage area)	trampled floor of fuel storage area, possible peat	firm to compact, platy (flaky) structure, very dark brown to black, very humose, organic silt with 10% twigs, 1-2 cm thick, only located in SE quarter, finds: Fe handle	27.08.10
8	2 (fuel storage area)	floor of fuel storage area, probably peat, left uncompacted since against the wall (possible same as 007)	very soft, dark brown, very organic silt with 2% coal inclusions, possibly same as 007 but left untrampled, no finds, 1% twigs, 9-10 cm thick, 1 cm thick on the E edge	27.08.10
9	3 (drain in cattle byre)	loose material between stones at the bottom of the drain	soft to loose, friable, medium brown, humose silt with < 1% birch twigs and containing hay fibrous remains, 1-4 cm thick thickest in corners	27.08.10
10	4 (under wooden floor in cattle byre)	wooden floor remains	loose to soft, friable, medum brown, extremely organic humose silt with lots of decomposed wood, almost 100% organic matter (wood and possibly hay remains), 2-3 cm thick	27.08.10
11	5 (hardpacked floor of cattle byre)	hard packed floor of cattle byre	very compact, platy structure, multi-laminated dark brown, dark reddish brown, white, very organic silt, less compact and slightly thicker on W edge where there were wood fragments (former timber flooring?), clear sharp boundary, no finds	27.08.10
12	6 (corridor E of milk store)	remains of turf that was covering the floor	loose, friable, dark brown, humose silt, 1 cm thick, but was only up again the E-wall	27.08.10
13	6 (corridor E of milk store)	turf floor deposit	medium brown, compact, friable to flaky, humose silt with 1% wood and <1% burnt bones fragments, 1 cm thick	27.08.10
14	5 (hardpacked floor of cattle byre)	hard packed floor of cattle byre	very compact, platy structure, black (charcoal black) organic silt, no inclusions and finds, excavated 1 cm thich but did not come to bottom	27.08.10
15	6 (corridor E of milk store)	turf floor deposit (probably same as 13)	loose, medium reddish brown, humose silt, 1% burnt bones, < 1% wood, 2-3 cm thick	27.08.10

Context	Sampling trench	Interpretation	Description	Date
16	7 (badstofa / bedroom) under floor boards	dust, including coal ash dust, that filtered through floor boards	very soft, loose, top is 10 cm below floor boards, mid-greyish brown, very fine sandy silt, c. 5% wood chips, < 0.5 % decomposed paper, 2 % white ash flecks, 4 cm thick, clear and abrupt boundary with [020], finds: 3 buttons, 2 nails, 1 vessel glass, 1 ceramic, 1 leather, strips of bark?, especially in NE corner	27.08.10
17	8 (main corridor)	remains of turf layer on top of older floors	soft and loose along N-wall, firm but friable on S part of trench, humose silt, 2% gravel, 1% birch twigs, dark brown, 3 cm thick	28.08.10
18	8 (main corridor)	trampled turf floor	firm, friable near the wall but flaky in middle of corridor, dark brown humose silt, with 2% charcoal and plant material (turf), 2% unburnt bone, boundray gradual (turf on top of turf)	28.08.10
19	8 (main corridor)	turf floor deposit	very lensed, seems to be made of several layers of trampled turf, very thin lenses of reddish brown and yellowish brown humose silt, firm to compact, soft, 1% birch twigs, 2 % volcanic pebbles probably fallen from wall, thickness unknown but up to 5cm were excavated.	28.08.10
20	7 (badstofa / bedroom) under floor boards	turf dust and peat ash dust that filtered through floor boards with very fine sand from cleaning	light and yellowish/reddish brown, very soft, silt (very fine sandy silt) 1% decomposing wood chips, 2-3 cm thick, sharp and clear lower boundary with [021]	28.08.10
21	9 (bór / pantry)	possible deposit connected to roof repair by Áskell	loose material, soft and loose, with few artefacts (nails, sheet metal) and a lot of wood chip fragments (15%), light brown silt, boundray clear, 1cm thick	28.08.10
22	9 (bór / pantry)	floor or accumulation of residues connected to roof repair by Áskell	firm, soft to flaky, medium brown humose silt (turf) with coal ash (1%), birch twigs (10%), and wood chips (8%), Finds: textile, boundray bery sharp, thickness 2 cm	28.08.10
23	10 ("new kitchen")	uppermost layer	very soft, loose, reddish brown sandy silt, < 1% wood chips and hay, 0.5 cm thick on W-side and 1 cm thick on E side, clear, sharp boundary with [024]	28.08.10
24	10 ("new kitchen")	hard trodden floor	very compact, hard trodden and smooth, with platy structure on W half, firm and friable to loose in E half, where layer left untrampled (also sheltered by a shelf on the wall) dark brown to black silt, 5% birch twigs (rýs), minutes lens of turf (2mm thick) in SE corner, lens of white ashy crumbs in SW corner, 3 cm thick where bottomed on turf in SE corner, but the bottom of the layer was not reached elsewhere (depth of 1 cm excavated on W)	28.08.10
25	9 (bór / pantry)	turf floor deposit with white leached lenses	dark reddish brown, turf that comes in big chunks so could be very recent, firm, flaky, humose silt, thickness 2 cm	28.08.10
26	9 (bór / pantry)	compact dark floor deposit	dark brown, compact and platy (flaky) structure, humose silt (turf = organic matter with grass), 2% wood chips, 2 to 1 cm thick	29.08.10
27	11 (sheephouse)	roof collapse (turf & timber)	loose, soft, reddish brown, very fine sandy humose silt, with fibres and grass visible, structural timber (5%), birch twigs (5%)	29.08.10
28	11 (sheephouse)	floor made of trampled sheep dung with lenses of laid turf	firm and flaky (platy structure), dark brown, organic, humose silt with birch twigs (3%), loams lenses (reddish brown turf)	29.08.10
29	11 (sheephouse)	floor made of trampled sheep dung	firm and flaky (platy structure), very dark brown, fibrous, humose silt with c. 7% hay frags., trampled sheep dung, occasional lenses of reddish brown sandy silt (turf), c. 2 cm excavated, but bottom of layer not reached	29.08.10

Context	Sampling trench	Interpretation	Description	Date
28	11 (sheephouse)	floor made of trampled sheep dung with lenses of laid turf	firm and flaky (platy structure), dark brown, organic, humose silt with birch twigs (3%), loams lenses (reddish brown turf)	29.08.10
29	11 (sheephouse)	floor made of trampled sheep dung	firm and flaky (platy structure), very dark brown, fibrous, humose silt with c. 7% hay frags., trampled sheep dung, occasional lenses of reddish brown sandy silt (turf), c. 2 cm excavated, but bottom of layer not reached	29.08.10
30	12 (hay barn)	loose material on top	loose, soft, medium brown humose silt with grass fibres (50%), birch twigs (1%), 5 cm thick, clear, sharp boundary with 031 below	29.08.10
31	12 (hay barn)	hay floor	firm, flaky (platy structure), reddish brown humose silt with grass fibres (hay remains), no inclusions or finds, 3 cm thick, clear, sharp boundary with natural andosol below	29.08.10
32	9 (bór / pantry)	Ashy floor	very compact, flaky to friable, fine silt, mostly peatash, coal ash and wood ash, 2% burnt bone frags, light greyish brown, 2 to 4 cm thick	29.08.10

7.2 Archaeoentomological sample register

No	Trench	Context	Volume	Quantity	Date
1	1	2	4L	1 bag	27.08.10
2	1	3	4L	1 bag	27.08.10
3	1	6	4L	1 bag	27.08.10
4	2	4	4L	1 bag	27.08.10
5	2	5	4L	1 bag	27.08.10
6	2	7	4L	1 bag	27.08.10
7	2	8	4L	1 bag	27.08.10
8	3	9	4L	1 bag	27.08.10
9	4	10	4L	1 bag	27.08.10
10	5	11	4L	1 bag	27.08.10
11	5	14	4L	1 bag	27.08.10
12	6	13	4L	1 bag	27.08.10
13	7	16	4L	1 bag	27.08.10
14	6	15	4L	1 bag	27.08.10
15	8	18	4L	1 bag	28.08.10
16	8	19	4L	1 bag	28.08.10
17	7	16	4L	1 bag	27.08.10
18	7	20	2L	1 bag	28.08.10
19	9	22	4L	1 bag	28.08.10
20	10	24	4L	1 bag	28.08.10
21	9	21	4L	1 bag	28.08.10
22	9	26	4L	1 bag	29.08.10
23	11	28	4L	1 bag	29.08.10
24	11	29	4L	1 bag	29.08.10
25	12	31	4L	1 bag	29.08.10
26	9	32	4L	1 bag	29.08.10

7.3 Finds register

No	Context	Trench	Type of object	Material	Weight (g)	Details
1	4	2	sheet metal piece	iron	16	off-cut
2	4	2	glass jar fragment	glass	11	green-colored glass, the rim is complete but the rest is broken, no thread visible on the rim
3	4	2	glass bottle fragment	glass	18	green-colored glass
4	5	2	2 window glass fragments	glass	3	clear glass
5	5	2	2 glass vessel fragments	glass	2	clear glass, two fragments probably of the same vessel
6	7	2	iron handle	iron	27	complete
7	16	7	2 pieces of wood thin object	wood	< 1	worked, one perforation on it, moisture on it indicates that it was on earth, 2 pieces
8	16	7	2 buttons	glass	< 1	each have four holes
9	16	7	1 button	shell or glass	< 1	hand made
10	16	7	glass vessel fragment	glass	< 1	white glass, very small fragment
11	16	7	glass vessel fragment	glass	< 1	clear glass, probably from a medicine phial, side fragments
12	16	7	2 nails	iron	4	complete heads, broken shank, very corroded
13	16	7	wood object	wood	< 1	broken shank of round cross-section, 4 sides tapering end to a point, unknown function
14	16	7	7 pieces of paper	paper	< 1	one newspaper clit with the word "Heklu" visible, teared, 2 are probably also from newspaper, 2 are green colored, 1 violet colored and 1 brown colored
15	21	9	wood pin	wood	1	round cross-section, carved to a point
16	21	9	iron nail	iron	8	machine-cut, flattened head, rectangular cross-section
17	21	9	2 pieces of sheet metal	iron	22	probably from the same piece but it is not possible to join them, a perforation is visible on one of them but it is broekn through the perforation, the other piece is a little bit concave