MINJASAFNIÐ Á AKUREYRI
AKUREYRI MUSEUM

Excavations at Gásir 2003
An Interim Report

H.M.Roberts

With contributions by Colleen Batey, Natascha Mehler, Elín Ósk Hreiðarsdóttir, Birna Lárusdóttir, Ramona Harrison, Seth Brewington, Jim Woollett, Thomas H. McGovern, Paul Adderley and Ian Simpson.

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by H.M.Roberts, Fornleifastofnun Íslands

Summary

Fornleifastofnun Íslands conducted an archaeological excavation at the known medieval trade site of Gásir in Eyjaförður between July 1st and August 22nd 2003. This work focused chiefly on a large open area excavation immediately to the west of the area examined in 2002. The total area now under investigation is approximately 600m², and is characterised by exceptionally complex archaeological structures and deposits up to 2m deep. The excavation was conducted on behalf of Minjasafnið á Akureyri, and formed the third field season of a major excavation project, scheduled to last for six years.

Excavation revealed the well preserved remains of a number of sunken featured buildings, believed to date to the 14th and possibly also the early 15th centuries. Substantial quantities of post-abandonment deposits were removed, revealing a complex sequence of occupational layers, including floors, hearths, paths, entrances and a putative "industrial" area. Additionally, trial excavation was carried out upon a number of outlying structures, in order to clarify their dating, function and possible association with the main ruin group. Excavation recovered a wide range of artefactual evidence, including items of slag, iron, copper alloy, pottery, stone, bone, horn and ivory.

The study of sulphur and sulphur residues recovered in 2002 is ongoing (see Adderley et al. below), as is the analysis of faunal remains recovered in 2002-2003 (see McGovern et al., below) .

Aims and Methods

Excavations proceeded for 8 weeks, with an average of 12 full time staff. These included many experienced professionals and a small number of archaeology students, from Iceland, the UK, Denmark, the Faeroes, Poland, France and the USA.

Minjasafnið á Akureyri and Ferðamálasetur Íslands arranged guided tours of the site every day, and a number of special events were arranged, along with a new exhibition about Gásir at the museum itself. This exhibition displays a broad range of artefacts recovered from the excavation in 2002.

Excavation in 2003 represents the third year of a six year project aimed at characterising a cross-section of the surviving archaeology at Gásir. This project also aims to provide interpretation and description of the ruins for the purposes of public outreach and education.

The archaeological aims in 2003 were;

- to extend the main excavation area up to 20m westwards, encompassing a second large group of earthworks, thought to represent a number of rooms or booths.
- to complete the excavation of a booth partially excavated in 2002
- to examine a number of outlying structures of unknown date and function.

Excavation methodology.

As before, the excavation methodology adopted was one of single context planning, within a large and contiguous open area. This was supplemented by conventional and digital photography, and a targeted programme of environmental sampling. A trial trenching methodology was adopted for the outlying ruins (Area C).

Artefacts were recovered by single context, and special finds located in 3 dimensions using a total station theodolite. All faunal remains were hand recovered and retained for further study.

Subsequent post–excavation work included the cleaning and registering of all artefacts, the digitising of all excavation plans, and the ongoing analysis of the site stratigraphy and chronology.

This document represents the second stage of reporting for excavation at Gásir in 2003. As such it should be seen to expand upon and replace the preliminary results[1] provided in the autumn of 2003.

[1] Roberts 2003b

Acknowledgements

Excavation at Gásir in 2003 was made possible by generous grants from Ríkisjóður and the Kristnihátíðarsjóður. We are most grateful for this support and for the support and co-operation of a large number of individuals and institutions.

The site was excavated by Mary Alexander, Hákun Andreasen, Águsta Edwald, Bruno Berson, Birna Lárusdóttir, Douglas Bolender, Marta Dulinicz, Elín Hreiðarsdóttir, Jón Óskar Jónsson, Lilja Björk Pálsdóttir, Oddgeir Hansson, Caroline Paulsen, Theresa Rowell, Freyja Sadarangani, and James Taylor. The excavation was directed by the author on behalf of Fornleifastofnun Íslands and Minjasafnið á Akureyri. Public relations were managed by Kristín Sóley Björnsdóttir of Ferðamálasetur Íslands. The project was administered for Fornleifastofnun Íslands by Ólöf Þorsteinsdóttir, and local liason was managed by Sædís Gunnarsdóttir of Fornleifastofnun Norðurlands.
Elín Ósk Hreiðarsdóttir and Birna Lárusdóttir carried out post-excavation work for the outlying ruins (Area C), and have co-authored those results.

The excavation work is supported by an international and multi-disciplinary team of leading specialists.
The artefacts were processed by Sirrý Þorgeirsdóttir and registered by the author and by Dr. Colleen Batey, who has described the finds. Natascha Mehler has continued her study of the pottery. Professor Ian Simpson and Dr Paul Adderley have continued their study of sulphur and sulphur residues. Professor Thomas McGovern, Dr Jim Woollet, Ramona Harrison and Seth Brewington have continued their study of the faunal remains. Magnús Á. Sigurgeirsson continued his study of the tephra profile for the site and its environs.

Our thanks are due to Guðrún Kristinsdóttir, the staff of Minjasafnið á Akureyri, and to the people of Akureyri and Eyjafjörður for their support and encouragement.

We would especially like to thank Friðrik Gylfi Traustason and Guðrún Björk Pétursdóttir, the farmers at Gásir, for their kindness and co-operation.

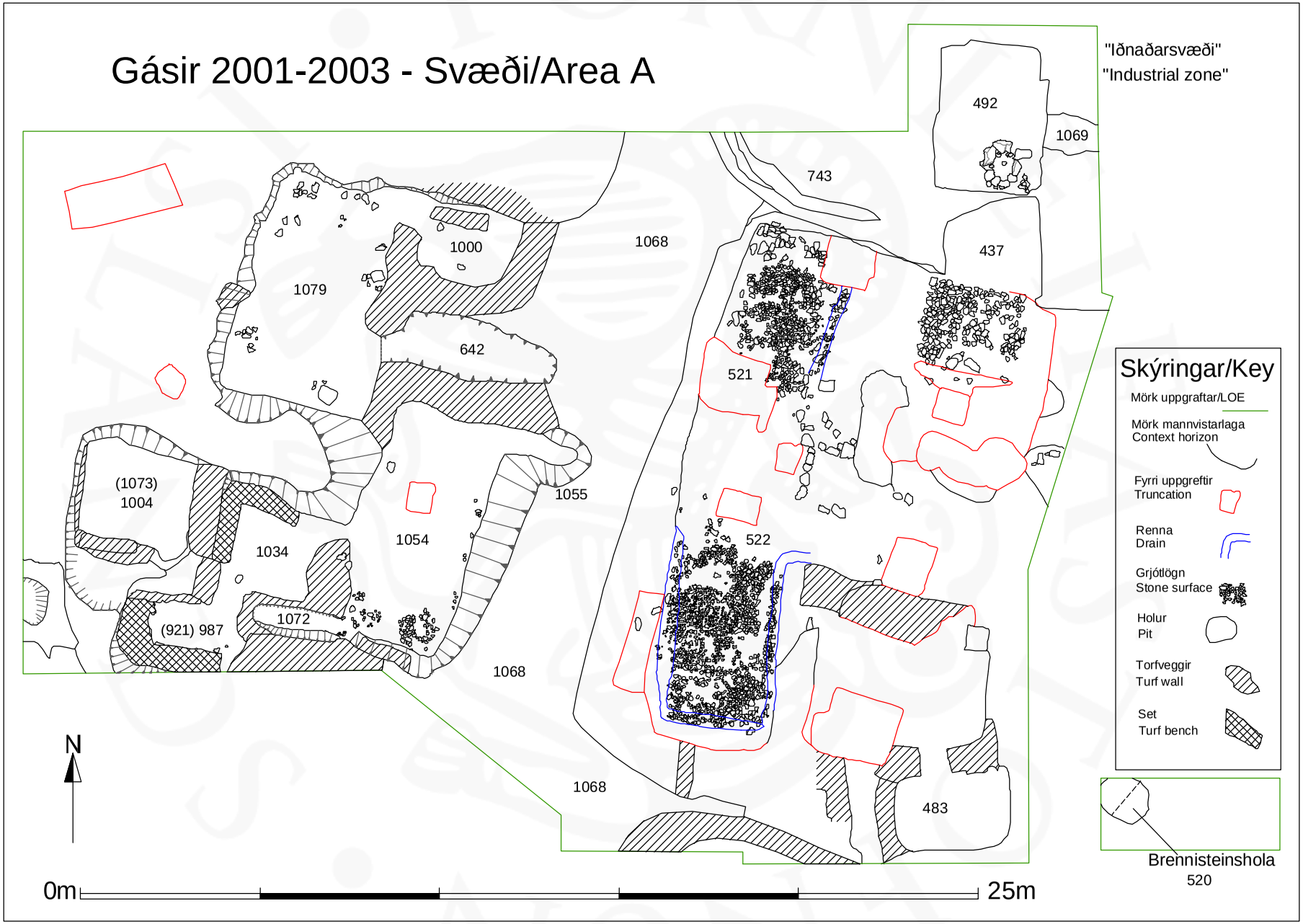


Figure 1 – All Features plan

Results (See Figure 1 – above)

Area A

The structures excavated previously (in 2001-2002) represented a discrete cluster of connected rooms. The rooms or booths excavated in 2003 were seen to be an additional and separate building cluster or group of rooms. The area between these two building groups is formed by a raised strip of heavily compacted and highly laminated deposits (Group 1068). This group is interpreted as the remains of a track or pathway. At least six new rooms have been wholly or partially excavated, and these all appear to be to some extent interconnected. Groups 1000 and 1079 are seen to be built together into a large sunken area, one that has been dug down through older archaeological layers and structures. The largest booth (1054) seems to be a separate and different space, although connected, and groups 1004, 987, and 1034 seem to represent another connected sub-group.

Plate 1 - *Groups 987, 1004, 1034, and 1072 during excavation by James Taylor and Oddgeir Hansson.*

All the excavated structures are hybrid in construction technique, being primarily dug down, but with turf walls and benches forming their internal features, and dividing one room from another. This seems to represent a very pragmatic response to the challenges of building new functional spaces in a landscape already wholly characterised by the earthworks of earlier ruins. Most of these rooms included (at least) temporary fireplaces, and typically have exceptionally thin floors of trampled,

charcoal-rich soil. These rooms show evidence of multiple phases of use, re-occupation, reconstruction and repair, before finally being buried and protected beneath many layers of turf collapse and wind-blown sand. The rooms or booths excavated in 2003 are thought to represent a linked group of shops, storerooms, and living areas.

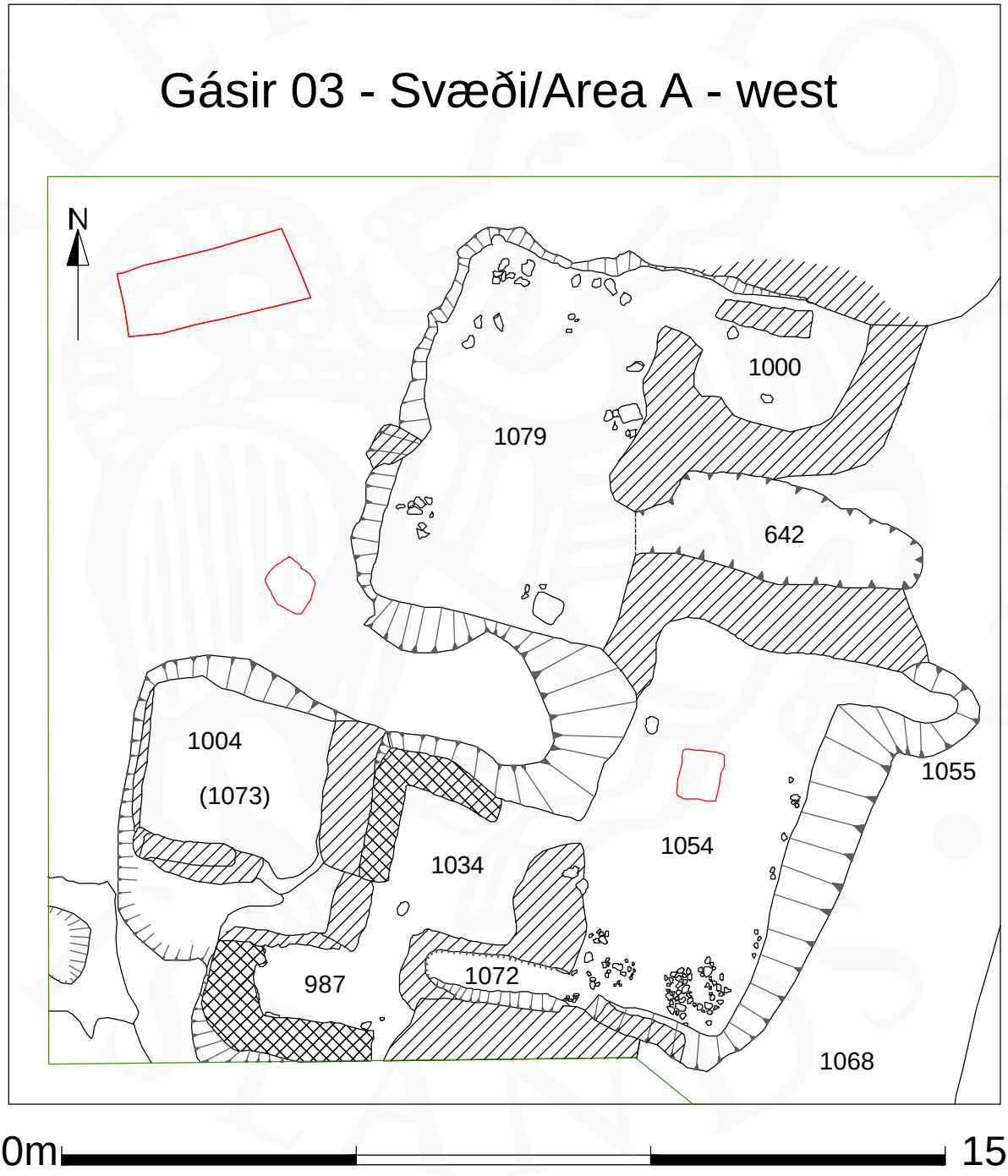


Figure 2 – The main 2003 excavation area**.**

Group 1079

Sub-groups; 1008, 1009, 1010, 1076, 1077, 1078

Additional contexts: 627, 634, 640, 651, 655, 675, 764, 822, 838, 861, 996, 1006

Group 1079 represents the construction, use and disuse of a large rectangular sunken featured building. In total this building or room measures some 6.6m in length, up to 4.2m in width, and a maximum of 1.6m in depth (at the current stage of excavation). The western part of this group is cut down through a complex sequence of occupational and disuse deposits, whereas its eastern side is formed by a low built-up turf construction.

The sub-groups excavated to date indicate a complex sequence of use, disuse and re-construction. It is not believed that excavation has yet reached the primary occupational layers, but rather it is extensive post-abandonment deposits that have been removed to date, along with some secondary (or perhaps tertiary) levels of partition, sub-division and occupation.

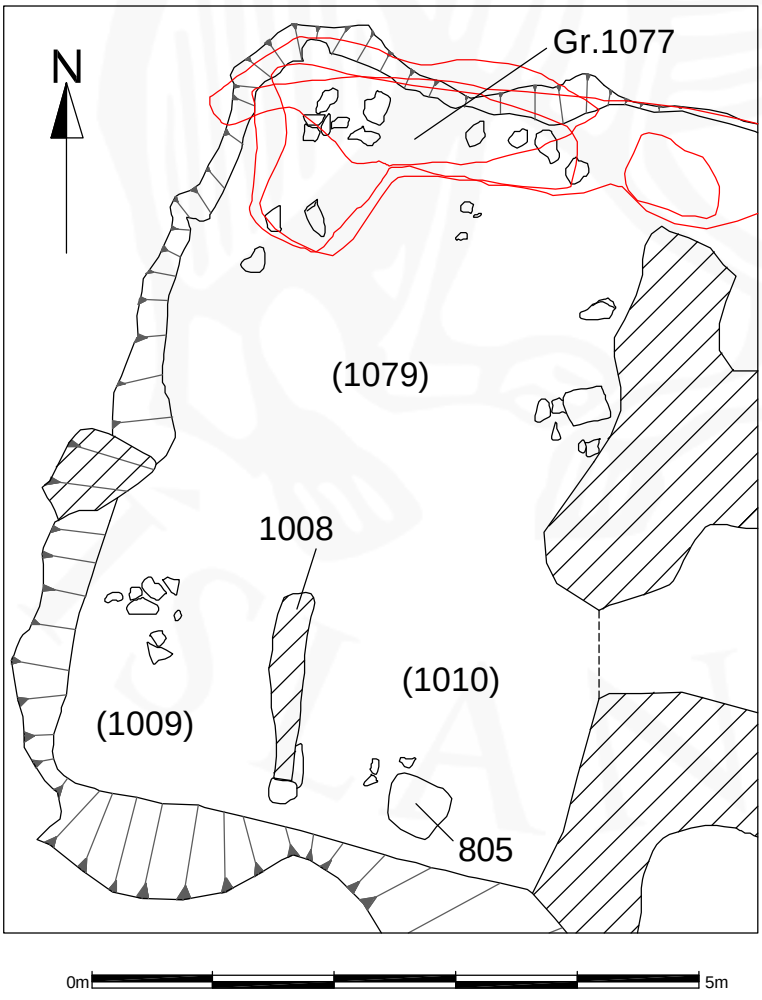


Figure 3 – Detail of Group 1079 etc.

Many, but not all, elements of Group 1079 may be assigned to various sub-groups. The earliest elements of Group 1079 excavated to date form parts of sub-groups 1009, 1010, and 1077.

Plate 2 – *The southwestern area of Group 1079, being planned by Ágústa Edwald and Håkun Andreasen. Camera facing east.*

Group 1009

Contexts: 918, 928, 936, 956, 973, 982

This group is characterised by multiple deposits of turf collapse, and located in the southwestern corner of group 1079. The above deposits appear to contain large blocks of relatively undisturbed/turbated turf, and this is thought to suggest immediate post-abandonment deposits, or possibly the deliberate collapsing of a turf superstructure. Taken together this group extends some 2.9m north/south and some 2.1m east/west. The combined depth of this group of contexts is up to 25cms. No artefacts were recovered from this group.

Group 1010

Sub-group 811

Contexts:717, 771, 776, 781, 782, 793, 798, 811, 816, 892, 900, 910, 939, 950, 962, 964, 967.

Group 1010 represents a sequence of post abandonment deposits together with some limited and temporary re-use at the southeastern corner of Group 1079. These deposits covered/filled an area of circa 3m x 2.8m, and include the Sub-group 811. Sub-group 811 contains a small hearth or firepit (Cut 805), and its associated fill 787.

Firepit 805 was sub-square in shape and measured circa 0.6m x 0.4m x 0.25m.

Plate 3 – *Firepit 805 prior to excavation. The large scale is 2m, the camera is facing north.*

Although broadly contemporary with Group 1009 and the later Group 1008, group 1010 is spatially distinct, and this physical arrangement seems to predate the construction of a partition (the later Group 1008). The deposits of Group 1010 are characterised by a variable mixture of turf collapse and windblown sands/silts. This group produced a small assemblage of slag, 2 Fe objects, and a fragment of whetstone.

Finds: 03-253, 03-092, 03-146, 03-259, 03-206

Group 1077 (See Figure 2)

Contexts: 906, 919, 920, 929

Group 1077 was located at the northern limit of the building, formed by layers of windblown sand and silt collecting within the lip of the building cut. A small quantity of slag was recovered from these layers (Context 920, Finds No 03-275). Also of note is an apparent large post hole in the northwestern corner, indicative of a potential timber superstructure – but as yet unexcavated.

Group 1008

Contexts: 828, 829, 883

Plate 4 – *Turf wall 829, seen from the south. The larger scale is 2m.*

Group 1008 forms a small low partition dividing the southwestern and southeastern parts of Group 1079. This spatial division had already been in place, but was at a slightly later point formalised by the construction of a low wall of turf and stone (Context 829). Wall 829 measured 1.74m in length, 0.28m in width, and survived to a height of 10-15cm. As such, it could only have functioned to mark a division of space, rather than forming any substantial barrier to transit.

Context 883 produced a small collection of slag and a whetstone fragment (Finds Nos 03-272 and 03-094)

Overlying Groups 1008, 1009, and 1010 was a further sequence of post-abadonment deposits. These form the contents of Groups 1076 and 1078.

Group 1076

Contexts: 662, 671, 673, 684, 688, 694, 700

Group 1076 is a collection of deposits of windblown sand/silt, with moderate small inclusions of turf debris. These deposits seal the turf wall 829 (above), and were located across the southern part of Group 1079.

A selection of artefacts were recovered from these layers;

ContextNo	FindsNo	Object_Keyword	Material_Keyword	Count	Notes
662	03-040	Pottery	Ceramic	1	Medieval
662	03-041	Pottery	Ceramic	1	C13-14th
671	03-042	Pottery	Ceramic	1	C14-15th
671	03-107	Fragment	Sulphur	2	
684	03-109	Fragment	Sulphur	1	
688	03-237	Slag	Slag	+	
688	03-080	Whetstone	Stone	1	
688	03-110	Fragment	Sulphur	1	
688	03-170	Object	Cu alloy	2	
700	03-240	Slag	Slag	+	
700	03-136	Object	Fe	1	

Table 1 – Finds fromGroup 1076

Group 1078

Contexts: 650, 725, 731, 732, 744, 750, 754, 761

Group 1078 is formed by layers of windblown sand and silt within the northwestern part of Group 1079.

No artefacts were recovered from the layers of this group. This might represent some difference in the pattern of deposition between Group 1076 and 1078. All other aspects being the same one would expect similar artefactual collection. It may be that the southern areas of Group 1079 are intrinsically more finds rich, or perhaps have seen later activity, for instance associated with the re-use evidenced by groups 1008 and 811.

Group 1054

Sub groups 1070 and 1071

Contexts: 652, 727, 753, 768, 777, 787, 818, 824, 837, 840, 846, 850, 860, 865, 874, 877, 882, 955 965, 969, 975, 984, 993.

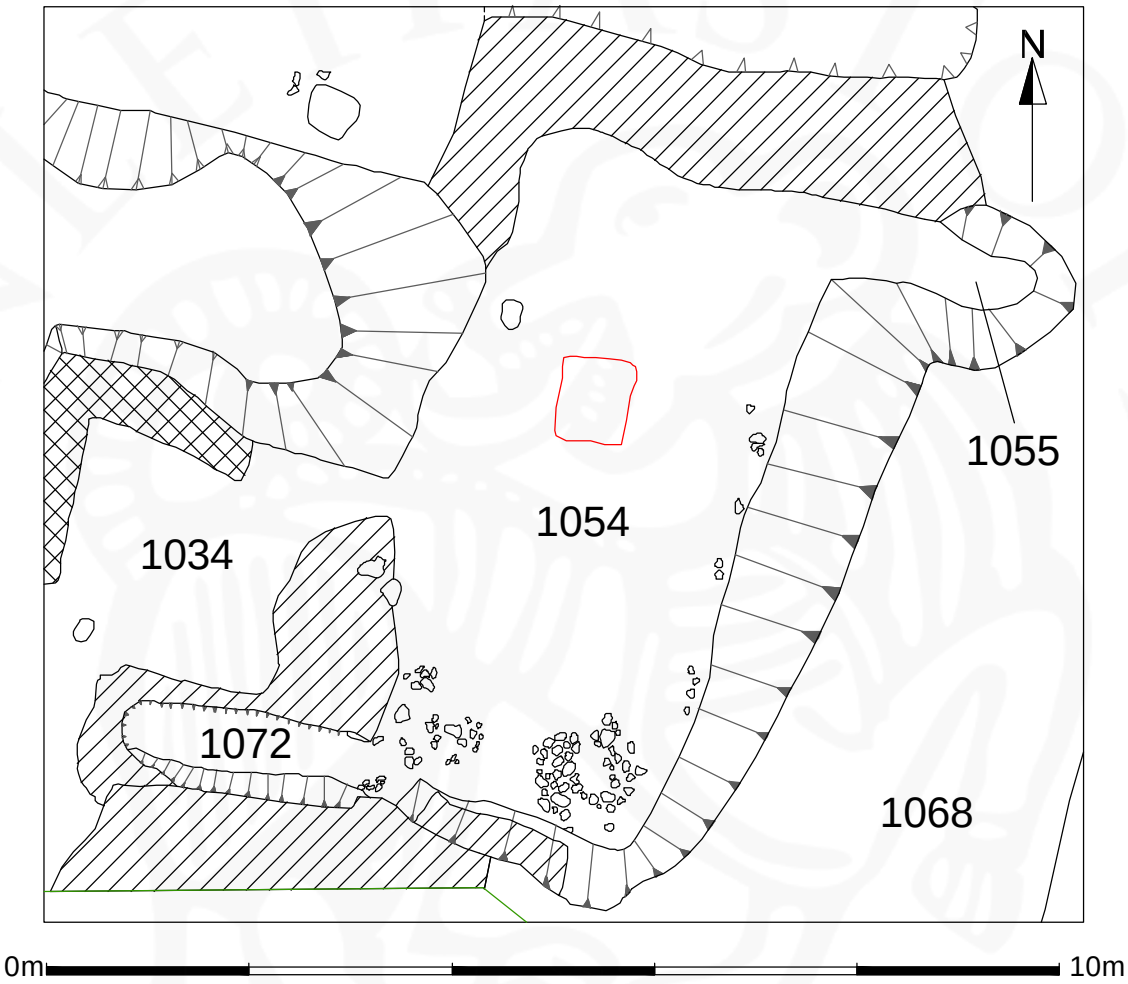


Figure 4 – Detail of Group 1054

This room is the largest of those excavated this year, measuring 6.5m x 3.4m, with a depth of up to 1m. A number of thin occupation layers have been excavated in this room, along with a cluster of temporary hearths at its northern edge (Group 1070), and a more substantial sequence of stone built hearths along the southern edge (Group 1071). The northern limit of this building appears to be turf built along with parts of the south western corner. The other sides/walls of the room have been cut down through earlier deposits. This room is perhaps the "centre" of the cluster of rooms excavated this year, with all the other rooms potentially connecting to it, although possibly at an earlier level to those yet reached. Also of note is the apparent front

entrance to this room (Group 1055–see below). A test pit (presumably) excavated by Daniel Bruun and Finnur Jónsson was located at the centre of this room – this shows a sequence of at least a further 50cms of very fine, laminated occupation deposits, over an apparent rough stone surface.

Plate 5 - *Group 1054 seen from the west. The scale is 2m. Clearly visible at the left of the scale is the test pit excavated by Daniel Bruun and Finnur Jónsson*

Within the test pit at least 5 further floor layers are visible (each measuring less than 3mm), although their association with a room of the current plan is as yet speculative. At the south western corner of this room, a shallow passage or trench leads away to the west (Group 1072 – See below).

ContextNo	FindsNo	Object_Keyword	Material_Keyword	Count	Notes
652	03-076	Unworked Stone	Stone	1	
727	03-207	Worked Stone	Stone	1	
727	03-242	Slag	Slag	+	
727	03-039	Pottery	Ceramic	2	C14-15th
727	03-138	Object	Fe	2	
753	03-140	Object	Fe	1	
768	03-089	Unworked Stone	Stone	1	
787	03-147	Object	Fe	3	
846	03-065	Baking plate	Stone	3	
865	03-149	Object	Fe	1	
984	03-036	Button?	Cu alloy	1	

Table 2 – Finds from Group 1054

Group 1070

Contexts: 839, 979, 980

Group 1070 is a small cluster of layers containing peat ash and/or charcoal, located at the northern edge of Group 1054. They may be taken together to represent a very brief episode of secondary use of this structure – most likely being a number of temporary hearths or fireplaces. No artefacts were recovered from these layers.

Group 1071

Contexts: 887, 891, 901, 907, 912

Group 1071 is an altogether more substantial episode of hearth construction and use located at the southern edge of Group 1054. It comprises 2 layers of stone rubble (contexts 887 and 907), along with 2 deposits including peat ash, burnt turf and stone (contexts 901 and 912). The remaining context 891 is aeolian in nature and thought to indicate a pause or interval in the use of this feature. No artefacts were recovered from these layers.

Plate 6 – *Context 912 seen from the northwest. The scale is 1m.*

Groups 1070 and 1071 are both thought to be indicative of later re-use. They were sealed beneath numerous layers of turf collapse and windblown material. It is thought unlikely that they are entirely contemporary, but may rather indicate separate events of re-use, although perhaps not separated in time by any great period.

Group 1072

Contexts:791, **802**, 803, 809, 826, 844, 849, 864, 873, 897, 902, 914, 922, 925, 941, 942, **943**.

Group 1072 extends west from the southwestern corner of Group 1054 – it comprises a narrow linear cut feature (context 943) measuring 2.5m x 0.6m and up to 0.4m deep, and associated fills and/or deposits. Immediately to the south and above cut 943 was a shallow terracing cut (context) 802, containing a small stretch of turf wall (context 803). The 2 cut features had been subsequently backfilled and sealed by numerous deposits of turf collapse and some windblown material.

Plate 7 – *Cut 943 after excavation. The scale is 2m - the camera is facing west. Cut 943 is clearly seen to truncate earlier turf constructions both at the north (right) and south (left)*

The function of this outshot is as yet unclear - as it does not appear to connect to Group 987/913, and no clear functional deposits were noted. As an interim hypothesis it is suggested that this curious feature may have served some storage function. The disuse of this feature appears to predate the construction of hearth feature Group 1070 (see above), and also the (re-) construction of Group 987 to the west (see below).

Only two artefacts were recovered from this group (Context 925-Find 03-045, Pottery,C13-14th, and Context 942-Find 03-276, Slag).

Group 1034

Contexts: 680, 712, 888, 898, 911, 926, 945, 949, 960

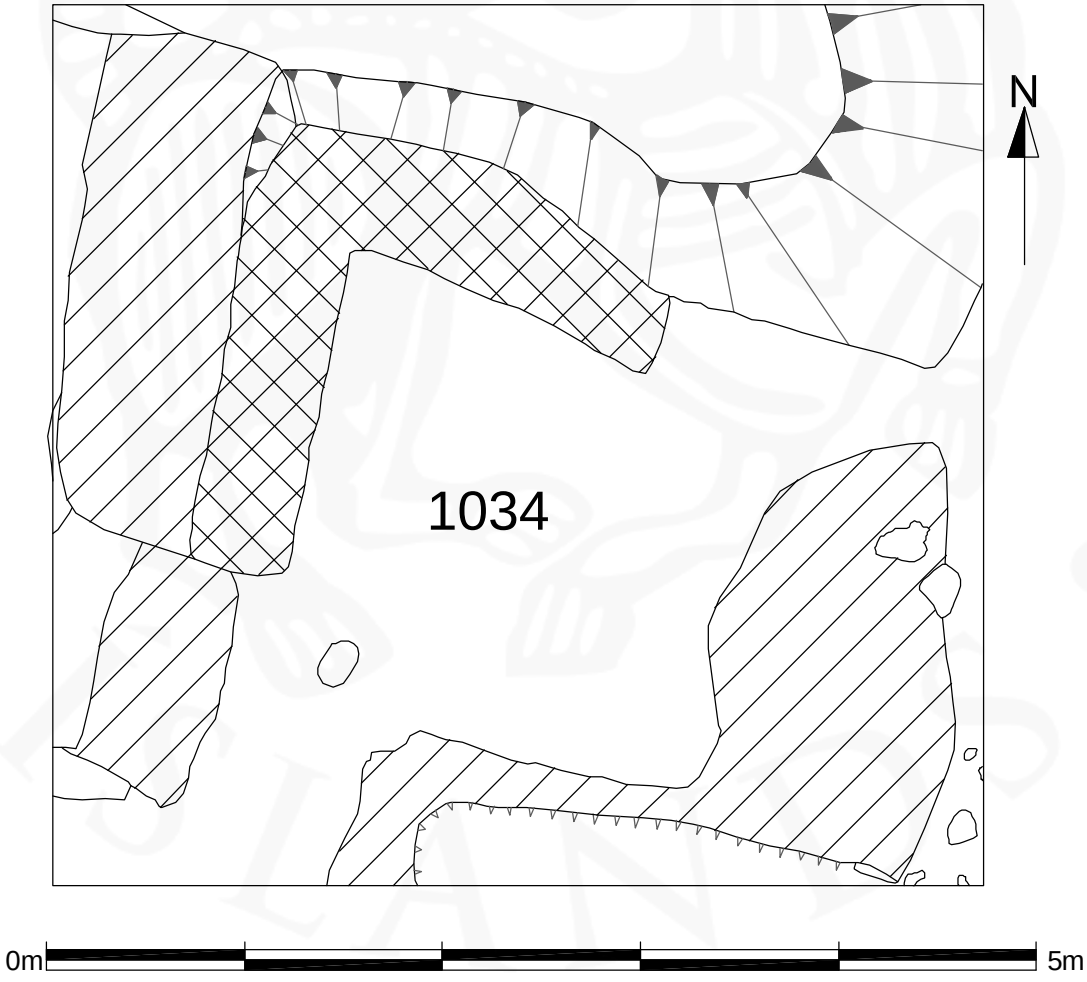


Figure 5 – Detail of Group 1034

Plate 8 – *Group 1034 after excavation. Camera facing west, the scale is 2m*

Group 1034 measures 2.8m x 2.9m and it is up to 0.8m deep. The northern limit of this room is formed by a large cut feature, truncating earlier deposits. The boundary between this room and that to the west (Group 1004 etc –see below) is formed by an irregular roughly built turf wall – one that exhibits a lack of carefully shaped and layered turf. A complex sequence of post-abandonment deposits has been removed from this room, exposing a clear and distinct floor surface. That surface (as yet unexcavated) is seen to be contiguous with the floor surface exposed beneath Group 987 (see below). The northern and western sides of Group 1034 have well built, brightly coloured turf benches up to 30cms high. The centre of this room shows evidence of burning, perhaps a temporary fireplace. Group 1034 links the area occupied by Group 1054 with that beneath Group 987 – as such it appears to serve as an ante-room. Further excavation in this area, and the excavation of its primary occupation surfaces will shed further light on the function of this space.

A single artefact was recovered from the post-abandonment fills of Group 1034 - Context 960, Find 03-043, Pottery, C13-14th.

Group 1004

Contexts: 879, 885, 896, 903, 917, 930, 937, 940, 951, 972, 997

This room lies beneath the remains of a later re-use (Group 1073 – see below). It measures 3.1m x 2.5m and is up to 0.8m deep. Deposits currently excavated or exposed within this room represent a phase of re-use, where this room was utilised for the dumping of peat ash and other debris, and subsequent windblown deposition. The southern limit of this room is formed by a substantial turf wall, and remains of a western turf wall are coming to light. The northern cut for this room is shared with Group 1034, as is its eastern wall. Earlier phases of this structure will be examined in 2004.

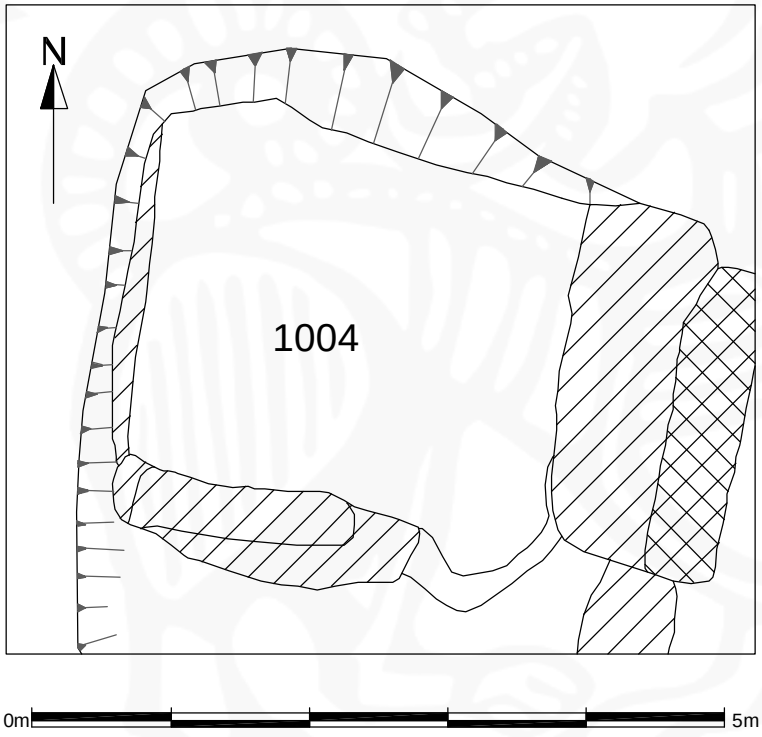


Figure 6 – Detail of Group 1004

It is noted that as yet no entrance to this room has been excavated – it is thought that an earlier phase of this room is likely to connect to an earlier phase of Groups 987 and 1034, via a putative entrance at the southeast.

3 Artefacts were recovered from this group;

Context 885, Find 03-151, Iron (x2) and Context 951, Find 03-047, Pottery, C14-15th

Group 1073

Sub-groups 708, 1074, 1075

Group 1073 comprises three sub-groups of short term re-use and disuse, located directly over Group 1004 (see above) - utilising the same space, and the same construction cut, although now as a partially filled hollow into which additional features have been added. Group 1075 is the earliest of these sub-groups, overlain by Group 1074, and subsequently by Group 708, the latest.

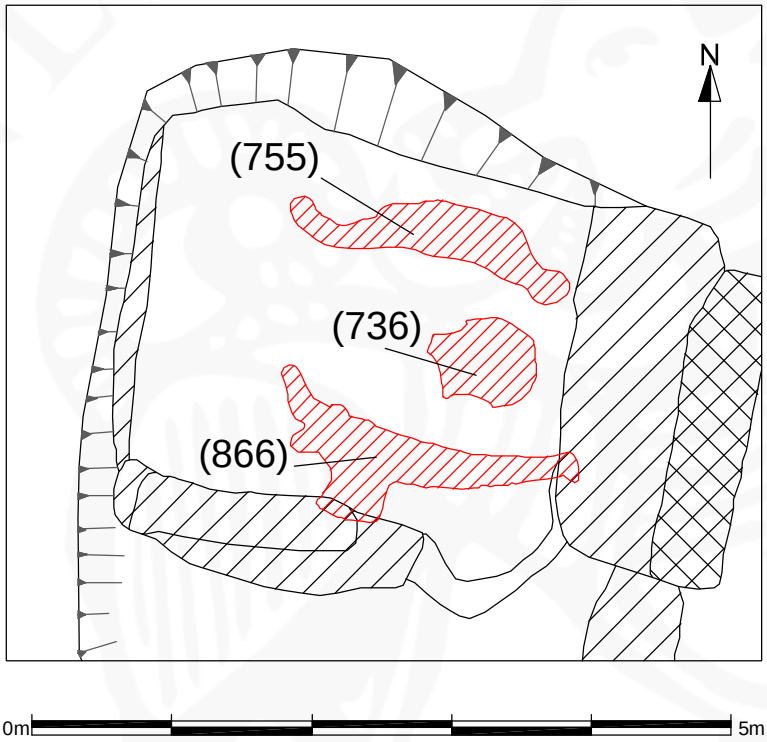


Figure 7 – Elements of Group 1073, super-imposed over Group 1004. 755 and 866 are wall fragments, and 736 is a short lived fire-place or hearth.

Group 1075

Contexts: 736, 746, 847, 848, 866, 916

Group 1075 is an ephemeral phase of re-construction and re-use, including a short piece of turf wall (context 866), two episodes of burning (contexts 736 and 916), and a single small trampled layer (context 746) interpreted as a floor surface.

Five pieces of unworked stone were recovered from context 746 (Find 03-085 (x3) and 03-086 (x2)).

Group 1074

Contexts: 654, 682, 729, 762, 770, 778, 807, 821, 830

Group 1074 represents a short period of disuse and aeolian accumulation.

A single item of copper alloy (Find 03-160) was recovered from context 654.

Group 708

Contexts: 575, 685, 693, 702, 703, 710, 711, 723, 755

Group 708 is a final brief episode of reconstruction and re-use above group 1074. It includes one small piece of turf wall (context 755) and 3 very small deposits of in-situ burning (Contexts 702, 703, and 723). This episode of re-use utilises both the pre-existing hollow from group 1004 (see above), and the turf wall 866 from group 1075. The in-situ burning is interpreted as three separate events, but these could merely indicate 3 days, or three sessions of fire-making. These deposits were subsquently sealed by aeolian sand and silt. No artefacts were recovered from Group 708.

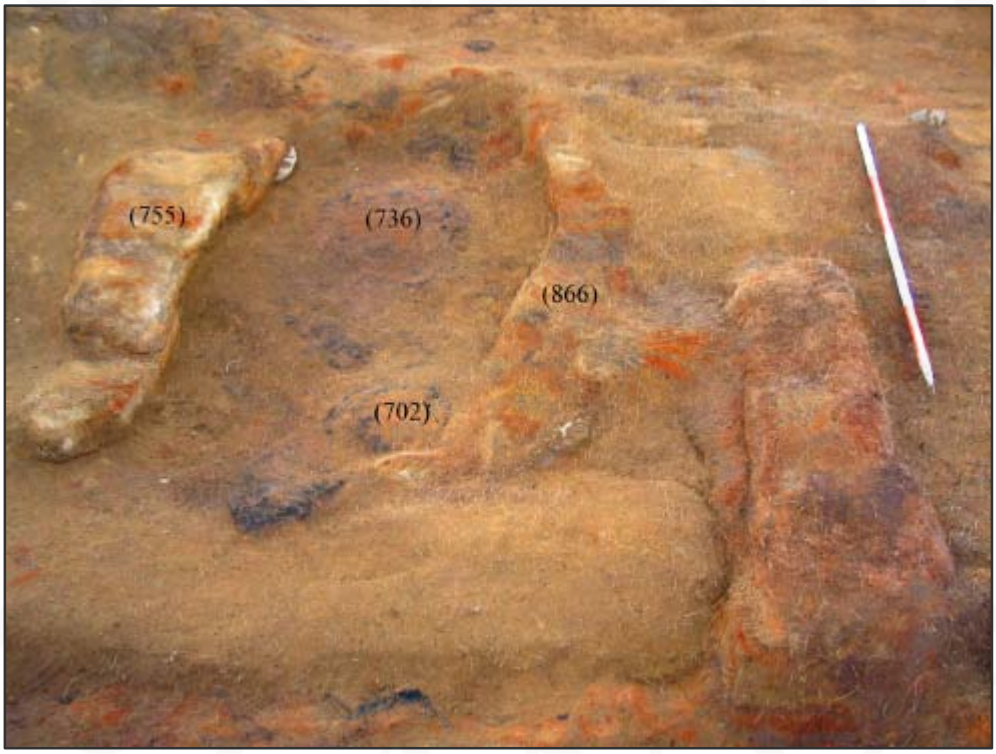


Plate 9 – *Parts of Group 1073, seen from the west. The scale is 2m.*

Groups 987 and 921

987 – Contexts: **813,** 968

921 – 678, 696, 709, 734, 738, 747, 766, 767, 783, 784, 789, 806, 819, 820, 827, 834, 836, 841, 842, 862, 871, 895, 924, 935.

Group 987 represents an episode of construction within the development of a partially excavated booth at the southwest limit of excavation, comprising a re-cut (Context 813) and a short length of turf wall (Context 968). Group 921 comprises the post abandonment fills of this structure.

Exposed beneath (and earlier than) the re-cut 813 are a group of turf walls and/or benches, and a floor surface – contiguous with that exposed in Group 1034. Group 987 is clearly connected to Group 1034 by means of a narrow entrance passage – although this had later been blocked (see Group 1053, below). This "room" measures 3.5m x1.9m and is up to 1.2m in depth. This structure is chiefly dug down, but includes a turf wall at its northern limit. The interior of the room includes a turf construction some 20cms high at its western and southern edges. This may also be interpreted as a turf bench. Excavation will continue within this room in 2004.

***Plate 10** – Brightly coloured turf walls and "bench" exposed beneath Group 987. Seen from the west.*

Only 2 artefacts were recovered from these groups;

Context 738, Find 03-245, Slag

Context 841, Find 03-148, Iron

Group 1053

Contexts: 999, 1001, 1002

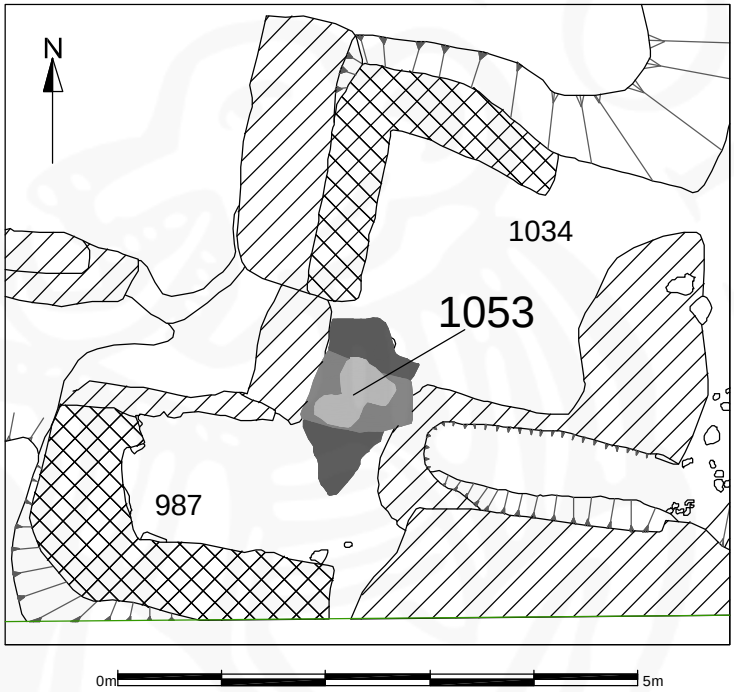


Figure 8 – Blocking event Group 1053

Group 1053 contains 3 small layers of irregular turf pieces that together block the entrance between groups 1034 and 987. This blocking event sits over the floor surface now exposed between the two structures, and was sealed on both sides by extensive post-abandonment deposits (See Groups 1034 and 987 above). No artefacts were recovered from Group 1053.

Group 1068 - Track

Sub-groups 1059, 1065, 1066 and 1067

At the eastern edge of the 2003 main excavation area was a raised strip characterised by the absence of rooms, and by a highly compacted and complex sequence of surfaces. This area is interpreted as a track or pathway, both connecting and dividing the 2 clusters of rooms excavated in 2002 and 2003. These layers appear to have been formed by the deliberate dumping of material, and by subsequent trampling. These layers may be subdivided into many sub-groups. Groups 1066 and 1067 represent the lowest of these deposits and these will require further excavation. Group 1065 (and further sub-groups) are thought to represent one (lower) phase of activity, and Group 1059 (and further sub-groups) represent the uppermost phase. Group 1059 is associated with the buildings excavated to the east, in 2002.

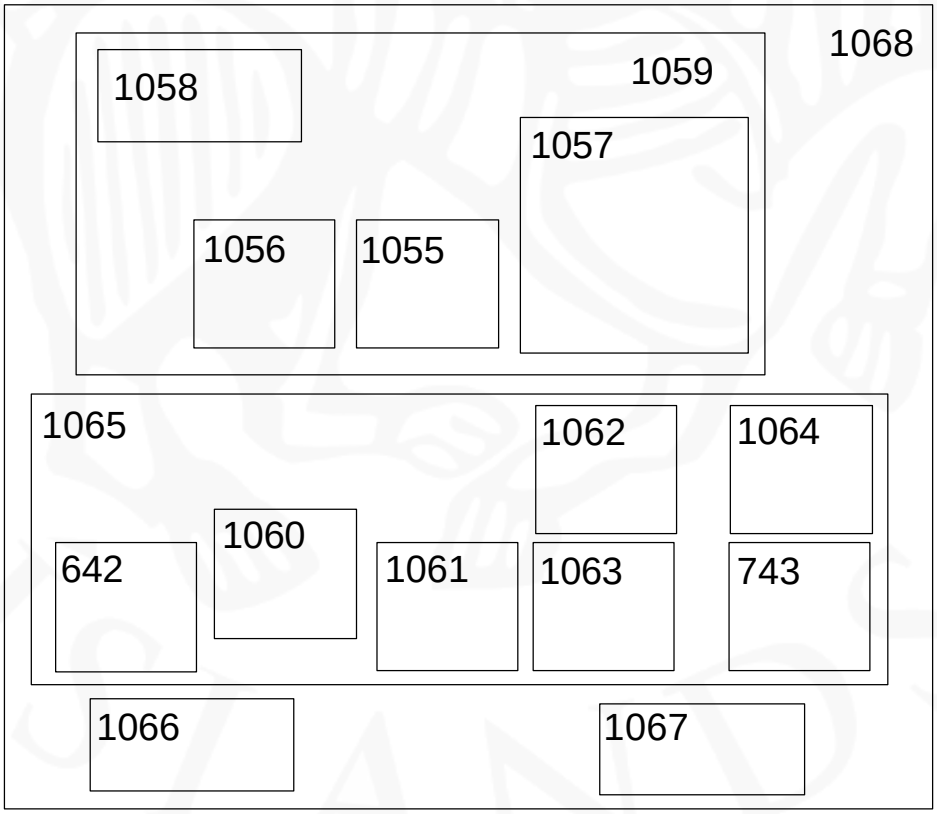


Figure 9 – Schematic hierarchy of track group 1068

Group 1066

Contexts: 779, 795, 799, 804, 810, 815, 832.

Group 1066 comprises track layers located at the centre-west of the track area, beneath Group 642. These deposits are typically very thin and formed from mixed turf collapse and aeolian deposits. These layers may be interpreted as part of an early phase of track leading towards Group 1079, and perhaps replaced by the "entrance" feature Group 642.

ContextNo	FindsNo	Object_Keyword	Material_Keyword	Count	Notes
779	03-194	Fragment	Leather	1	
779	03-252	Slag	Slag	+	
779	03-046	Pottery	Ceramic	1	C14-15th
779	03-090	Unworked Stone	Stone	1	
779	03-091	Unworked Stone	Stone	1	
779	03-114	Fragment	Sulphur	3	
779	03-145	Object	Fe	2	
815	03-258	Slag	Slag	+	
832	03-264	Slag	Slag	+	

Table 3 – Finds from Group 1066

Group 1067

Contexts: 760, 785, 790, 792

Group 1067 is a group of track layers at the northeast, truncated by Groups 492 and 743 (below). These deposits were highly compacted and contained some traces of peat ash. These layers maybe interpreted as track formation leading towards the "industrial area" prior to the construction of Group 492 (see below).

ContextNo	FindsNo	Object_Keyword	Material_Keyword	Count	Notes
760	03-031	Pottery	Ceramic	1	C13th
785	03-254	Slag	Slag	+	
785	03-027	Object	Cu alloy	1	
785	03-030	Plaque	Cu alloy	1	
792	03-032	Rivet/rove	Cu alloy	1	
792	03-067	Vessel	Stone	1	

Table 4 – Finds from Group 1067

Group 1065

Sub-groups 642, 743, 1060, 1061, 1062, 1063, 1064

Additional contexts: 676, 679, 689, 698, 720, 721, 749, 756, 989.

Group 1065 comprises several clusters of spatially related track layers, and also construction events associated with this phase of track. The lower boundary of this meta-group is formed by an extensive track layer, Context 756. The latter context

appears to be broadly contemporary with layers of disuse and ephemeral re-use within Group 1054 (and hence likely also Groups 1034, 987 etc). The upper boundary of this group is formed by major surface contexts 637 and 672. Group 1065 maybe sub-divided internally by a pair of more extensive surface layers (Contexts 679 and 698)

Group 642 (see figure 2)

Contexts: **581**, 643, 644, 645, 646, 647, 648, 649.

This group represents an irregular linear cut feature (Context 581) and its associated deposits. Cut 581 truncates the extensive track surface (Context 756, above), and is thought to form some kind of entrance way, or an ante-room to Group 1079. Cut 581 measured up to 4.4m in length, 1.7m in width, and 0.45m in depth, and had been partially filled with deposits of turf prior to abandonment. This feature, and its relationship with Groups 1079 and 1000 awaits further examination.

Finds 03-068 (stone object) and 03-130 (Iron object, x6) were recovered from this group

Group 743 (see Figure 1)

Contexts: 718, 724, **739**, 740, **741**, 742

This group contains two narrow parallel curvilinear gulleys (Contexts 739 and 741) and their associated fills. The function of these features is not wholly transparent, although they do serve to demarcate the "industrial" area at the northeast of the site, and may well have had some role in drainage. The full extent of these features is unclear, as they have been truncated by later features (group 492) and by previous excavation, and continue beyond the current limit of excavation. Where seen, these gulleys measured circa 0.15-20m in width and circa 0.2-25m in depth, being steep sided with a narrow base.

A single object of copper alloy was found in context 742 (Find 03-037)

Group 1060

Contexts: 681, 692, 745

A small cluster of related track deposits towards the north of the excavated track area. These overlay an isolated charcoal horizon (context 749) and were sealed by an extensive track surface (context 672). The latter context also forms the upper limit of Group 1065.

ContextNo	FindsNo	Object_Keyword	Material_Keyword	Count
681	03-236	Slag	Slag	+
692	03-172	Object	Cu alloy	1
745	03-246	Slag	Slag	+
745	03-174	Object	Cu alloy	1

Table 5 – Finds from Group 1060

Group 1061

Contexts: 683, 697, 701, 705, 706, 722

A related group of track layers, located at the centre of the track area. These deposits sit over the major surface 756 (see above) and beneath the surface 672 (see below). Group 1061 is characterised by its relatively rich finds assemblage, and by the inclusion of turf fragments within the matrix of the deposits.

Context No	FindsNo	Object_Keyword	Material_Keyword	Count
683	03-287	Object	Glass?	1
683	03-108	Fragment	Sulphur	1
697	03-190	Fragment	Leather	2
697	03-239	Slag	Slag	+
697	03-024	Clothing Fastener	Cu alloy	1
697	03-081	Unworked Stone	Stone	3
697	03-135	Object	Fe	1
701	03-241	Slag	Slag	+
701	03-082	Unworked Stone	Stone	1
706	03-191	Fragment	Leather	1
706	03-083	Unworked Stone	Stone	2
706	03-112	Fragment	Sulphur	1
706	03-137	Object	Fe	3
722	03-282	Object	Fe	1

Table 6 – Finds from Group 1061

Group 1063

Contexts: 715, 730, 748, 751, 758, 759

A related group of contexts located in the southern central area of the trackway, and overlain by extensive surfaces 698 and 679. Excavation of this group will continue in 2004.

A single item of slag has been recovered from these layers to date;

Context 748, Find 03-247.

Group 1062

Contexts: 656, 658, 661, 666, 670

A group of track layers located at the southern limit of excavation. These layers are stratigraphically later than Group 1063 and the surfaces 698 and 679, and earlier than the major surface 637.

A single item of slag was recovered from this group;

Context 666, Find 03-230.

Group 1064

Contexts: 663, 669, 691, 695, 704, 714, 733

The layers of Group 1064 are located at the northeast of the track area, and seal the gulley group 743 (see above). They are characterised as thin compacted deposits of mixed aeolian deposition and highly turbated turf collapse. This group is in turn overlain by Context 657 – which is itself truncated by the construction of groups 521 and 522, and sunken feature cut 436 (excavated in 2002). Therefore, these layers must belong to a phase of activity earlier than those construction events.

Context No	FindsNo	Object_Keyword	Material_Keyword	Count	Notes
663	03-229	Slag	Slag	+	
663	03-131	Object	Fe	1	
663	03-162	Object	Cu alloy	1	
669	03-079	Unworked Stone	Stone	1	
691	03-134	Object	Fe	2	
691	03-171	Object	Cu alloy	5	
704	03-029	Pottery	Ceramic	1	C13-early 15th
733	03-084	Unworked Stone	Stone	1	

Table 7 – Finds from Group 1064

Additional finds from Group 1065

The following artefacts were recovered from layers forming parts of meta-group 1065, but not from layers included in the above sub-groups.

ContextNo	FindsNo	Object_Keyword	Material_Keyword	Count	Notes
642	03-130	Object	Fe	6	
642	03-068	Object	Stone	1	
689	03-238	Slag	Slag	+	
698	03-052	Pottery	Ceramic	1	C13-14th
698	03-111	Fragment	Sulphur	1	
698	03-203	Fragment	Bark	3	
749	03-205	Object	Fe	3	
749	03-139	Object	Fe	1	
749	03-175	Object	Cu alloy	1	
756	03-063	Baking plate	Stone	2	
756	03-192	Fragment	Leather	2	
756	03-284	Object	Fe	1	
756	03-288	Object	Glass?	1	
756	03-200	Textile	Textile	2	
756	03-141	Object	Fe	1	
756	03-248	Slag	Slag	+	

Table 8 – Finds from Group 1065

Group 1059

Sub-groups 1055, 1056, 1057, 1058

Additional Contexts: 527, 529, 537, 548, 565, 571, 576, 588, 637, 668, 672.

Group 1059 is a meta-grouping that represents the upper phase of track layers. These layers are believed to be later than the primary use of structures excavated in 2003, but may be contemporary with the sunken featured buildings (Groups 521, 522 etc) excavated in 2002. The precise nature of that relationship is unfortunately obscured by previous excavation in 1908. The following groups may however also be contemporary with the process of post-abandonment deposition within the 2003 structures, and with traces of ephemeral re-use.

The sub-groups of Group 1059 are two spatial divisions of the track (groups 1057 and 1058) and 2 cut features and associated deposits (groups 1055 and 1056). A number of additional layers could not reliably be placed within sub-groups at this time.

Group 1055

Contexts: 624, 626, 635, **631**

This group comprises a shallow broad possible cut feature (context 631), its fill (context 635) and and 2 associated layers of overburden (contexts 624, 626). Cut 631 was located at the centre of the trackway, leading west towards the area occupied by Group 1054 (see above). As such it may be thought to function as an entrance – although it is stratigraphically later than any occupation horizon in that area. An alternative hypothesis may be that these deposits represent the final infilling of a pre-existing hollow, related to an earlier entrance feature that as yet awaits investigation.

No artefacts were recovered from this group.

Group 1056

Contexts: 563, 625, **632**

Group 1056 is formed by another shallow irregular scoop and its fill 625, and a related deposit 563. It was located at the southern limit of the track area, adjacent to the south eastern corner of group 1054. The function of this feature remains opaque.

The only artefacts recovered were three fragments of mineral sulphur;

Context 625, Find 03-104 and Find 03-105 (x2)

Groups 1055 and 1056 were overlain by surface layers 548, 571 and 588 – all located at the centre or southwest of the track area. These were in turn overlain by Group 1058, extending northwards.

Group 1058

Contexts: 525, 528, 544, 556, 562

A cluster of track layers located towards the northern limit of excavation, and including major surface 562. These layers are typified by aeolian deposition and some inclusions of turf collapse/debris.

Context No	FindsNo	Object_Keyword	Material_Keyword	Count
525	03-002	Needle	Whalebone	1
525	03-099	Fragment	Sulphur	1
528	03-017	Structural Fitting	Fe	1
528	03-018	Object	Fe	1
528	03-019	Object	Fe	1
528	03-020	Object	Fe	1
528	03-021	Nail	Fe	1
556	03-100	Fragment	Sulphur	1
556	03-122	Object	Fe	2
562	03-186	Fragment	Leather	1

Table 9 – Finds from Group 1058

Group 1057

Contexts: 546, 547, 549, 550, 560, 561, 567, 572, 573, 574, 667, 577, 583, 587, 614, 620, 623, 628, 636, 638.

A complex sequence of layers located at the southeastern limit of the track area, to the south and west of structures excavated in 2002. This group is characterized by very small and thin mixed deposits of aeolian material, turf collapse, and occasional peat ash dumping. Group 1057 is broadly contemporary with groups 1055, 1056 and 1058. Despite the number of layers included, this group is poor in finds (at least in comparison with eg. group 1058)

Context 567, Find 03-023, Mount?, Cu alloy

Context 574, Find 03-157, Sheet fragment, Cu alloy (x4)

Context 577, Find 03-158, Nail?, Cu alloy

Additional finds from Group 1059

The following artefacts were recovered from layers forming parts of meta-group 1059, but not from layers included in the above sub-groups.

ContextNo	FindsNo	Object_Keyword	Material_Keyword	Count
529	03-116	Unworked Stone	Stone	1
537	03-185	Object	Bone	1
571	03-286	Object	Pb	1
668	03-199	Object	Fibre/hair	1
672	03-187	Fragment	Leather	1
672	03-188	Fragment	Leather	1
672	03-189	Footwear	Leather	1
672	03-197	Object	Fibre/hair	2
672	03-231	Slag	Slag	+
672	03-281	Object	Fe	1
672	03-132	Object	Fe	1
672	03-163	Rivet/rove	Cu alloy	2

Table 10 – Finds from Group 1059

Plate 11 – *The southern part of the track is recorded and sampled***.**

“Industrial Zone”

Groups 492, 641, 998, 1005, 1069.

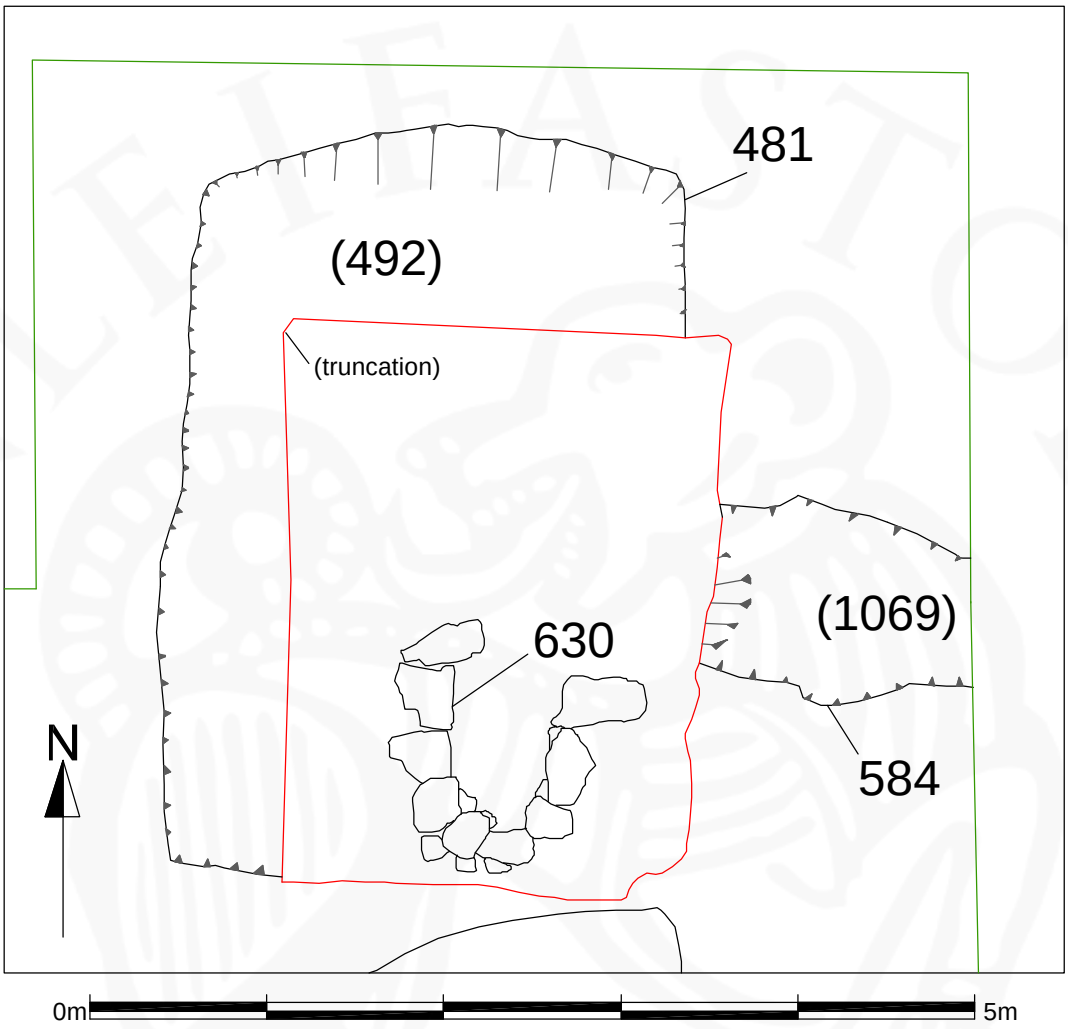


Figure 10 – Group 492 and associated features

Deposits and features investigated in the north eastern corner of the excavation appear to be somewhat different in nature to the temporary occupation seen elsewhere. Although somewhat truncated by the work of Daniel Bruun and Finnur Jónsson, excavation of these deposits recommenced in 2002. Further excavation in this area has clarified the extent of another sunken building. The most notable feature within this room was a large stone built oven or furnace. The deposits excavated throughout this area are typically very rich in peat ash, wood ash, and lightweight slag, suggesting that this area might have served some industrial function. Further specialist study of the industrial and fuel residues will hopefully shed more light on the nature of this industry – although metalworking of some kind appears most likely. The earliest

deposits excavated so far within this area form the lowest elements of groups 998 and 1005 (not illustrated).

Group 1005

Contexts: 845, 870, 875, 878, 884, 894, 905, 909, 913, 923, 927, 931, 934, 938, 944, 952, 959, 966, 970, 974, 977, 981, 983, 985, 990, 992, 995.

Group 1005 is stratigraphically earlier than Groups 1069 and 492.

This group comprises numerous deposits located to the south of Group 1069 (see Figure 7) – these were typically rather mixed deposits of peat ash and windblown sand. These layers do not appear to form the fills of a pit or similar feature, and are largely horizontally bedded. They are interpreted as a sequence of external dumps. A small assemblage of artefacts was recovered from this group, dominated by slag:

ContextNo	FindsNo	Object_Keyword	Material_Keyword	Count
845	03-093	Unworked Stone	Stone	1
875	03-268	Slag	Slag	+
878	03-270	Slag	Slag	+
894	03-095	Unworked Stone	Stone	1
966	03-279	Slag	Slag	+
970	03-280	Slag	Slag	+

Table 11 – Finds from Group 1005

Group 998

Contexts: 699, 707, 713, 716, 719, 728, 735, 737, 752, 757, 763, 765, 769, 772, 775, 786, 788, 794, 796, 814, 817, 823, 831, 835, 843, 863, 869, 876, 881, 886, 889, 899, 904, 908, 915, 932, 933, 946, 947, 953, 957, 963, 976.

Group 998 comprise the upper fills of a large negative feature at the northeastern limit of the excavation, to the north and east of group 492. This feature is not as yet fully excavated. Deposits excavated to date are once again typified by mixed deposition of peat-ash, wood ash, sand and occasionally burnt turf. The deposits of group 998 are stratigraphically below those of Group 492.

Group 998 produced a large assemblage of slag, and unidentified metal and stone objects (see below). These are held to be consistent with an industrial function.

Context No	FindsNo	Object_Keyword	Material_Keyword	Count
728	03-243	Slag	Slag	+
728	03-283	Object	Fe	1
735	03-244	Slag	Slag	+
737	03-173	Nail	Cu alloy	1
757	03-249	Slag	Slag	+
757	03-087	Unworked Stone	Stone	1
757	03-113	Fragment	Sulphur	2
757	03-142	Object	Fe	1
763	03-176	Object	Cu alloy	1
765	03-088	Unworked Stone	Stone	1
772	03-250	Slag	Slag	+
772	03-143	Object	Fe	1
772	03-177	Object	Cu alloy	2
788	03-178	Object	Cu alloy	1
794	03-054	Object	Glass?	1
796	03-255	Slag	Slag	+
796	03-285	Object	Fe	1
817	03-260	Slag	Slag	+
823	03-202	Object	Fibre/hair	1
823	03-204	Fragment	Bark	1
823	03-261	Slag	Slag	+
823	03-262	Slag	Slag	+
831	03-263	Slag	Slag	+
831	03-181	Object	Cu alloy	1
835	03-265	Slag	Slag	+
843	03-266	Slag	Slag	+
876	03-269	Slag	Slag	+
881	03-271	Slag	Slag	+
915	03-274	Slag	Slag	+
915	03-066	Baking plate	Stone	1
933	03-034	Fragment	Bone	1
953	03-096	Weight?	Stone	1
957	03-277	Slag	Slag	+
963	03-278	Slag	Slag	+
963	03-097	Unworked Stone	Stone	1
963	03-115	Fragment	Sulphur	1

Table 12 – Finds from Group 998

Group 1069

Contexts: **584**, 585, 589, 590

Group 1069 comprises a narrow linear cut feature (Context 584 – see figure 7) and its associated fills. This feature is believed to have served as an entrance to Group 492 (below) although previous excavation by Daniel Bruun and Finnur Jónsson has removed the relationship between the two groups. An alternative hypothesis may be that this feature served as an air inlet or flue for the hearth/furnace construction 630 (see below).

Group 1069 produced only a small quantity of slag and a fragment of sulphur (Context 585, Find 03-219, Slag - Find 03-102, Sulphur)

Group 492

Contexts**: 481**, 533, 534, 535, 541, 569, 579, 615, 616, 618, 619, 622, 629, **630**, 633

Group 492 comprises a large rectangular sunken feature (Cut 481) together with a substantial stone built fireplace (Context 630 – see Figure 7) and associated deposits. These features had been partially excavated in 1908 and 2002. Truncation from 1908 has removed a significant part of these features, and may obscure their full interpretation.

Cut 481 measures circa 4.3m in length, 2.9m in width and up to 1.95m in depth. The function of this feature appears to have been solely the accomodation of the fireplace 630.

Plate 12 – *Hearth or furnace feature 630. Seen from the north, the scale is 1m*

Feature 630 was walled on 3 sides by medium to large uncut stones, surviving to a height of up to 2 courses. It is ovoid in shape and measures up to 1.45m in length, and typically circa 1.15m in width. Within the stone surround 630 was a blackened slag rich layer (context 622) at the base of the hearth, overlain by a thick deposit of peat ash and burnt earth (context 618). Large quantities of heat-affected stone within Bruun's backfill of this feature might suggest that this feature was originally somewhat more substantial – one might hypothesise a larger and more complex superstructure. Despite this uncertainty, the scale and complexity of the surviving remains are entirely different in type and nature to any other surviving hearth or fireplace features so far excavated at Gásir. It it thought that this feature may have been a furnace – or at least served a function connected to industrial activity.

The northern end of Cut 481 had been filled with loose deposits and then faced and capped with turf, forming a shelf or bench (Contexts 533, 534, 615, 535,). This feature is thought to have served as a seat or working surface.

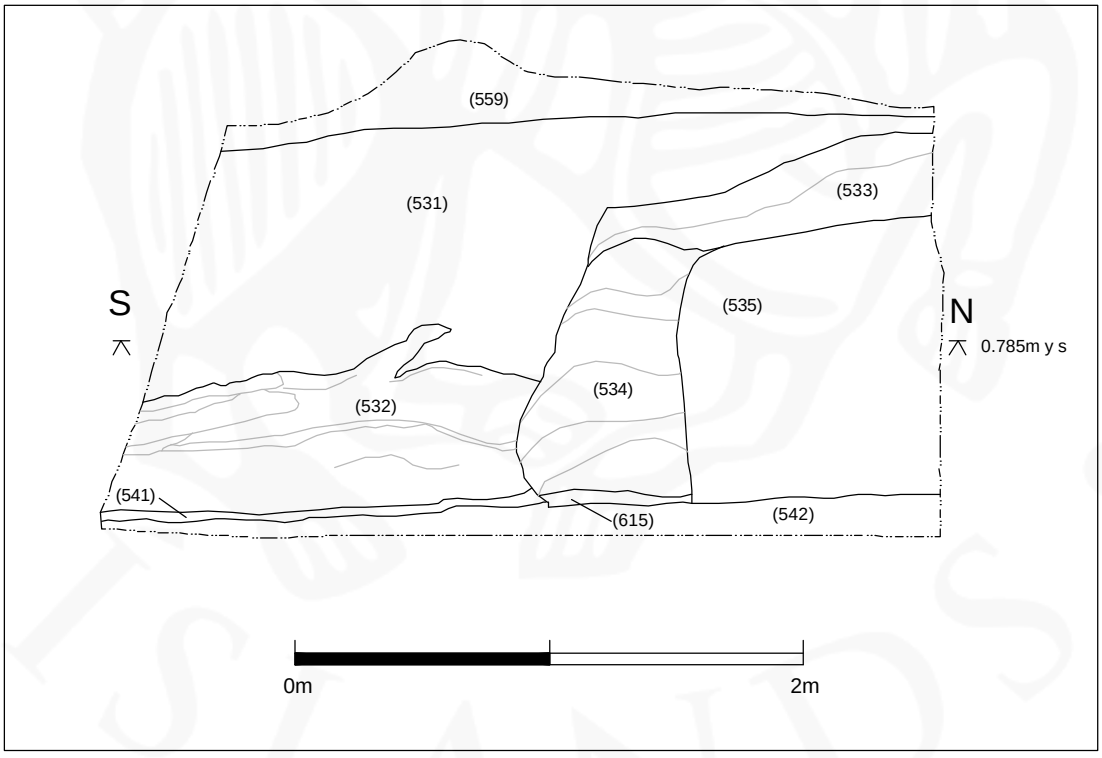


Figure 11 – East facing section showing bench construction (Contexts 533, 534, 535, 615) within Group 492.

Context No	FindsNo	Object_Keyword	Material_Keyword	Count
533	03-212	Slag	Slag	+
533	03-061	Baking plate	Stone	2
534	03-213	Slag	Slag	+
535	03-214	Slag	Slag	+
535	03-120	Object	Fe	1
541	03-121	Object	Fe	1
569	03-218	Slag	Slag	+
569	03-125	Object	Fe	1
618	03-222	Slag	Slag	+
633	03-223	Slag	Slag	+

Table 13 - Finds from Group 492

The finds assemblage recovered from Group 492 is dominated by slag and unidentified iron objects. This is held to be consistent with an industrial function for this group. Group 492 was sealed by a sequence of post-abandonment layers and backfill (Group 641).

Group 641

Sub-group 555

Contexts: 530, 531, 532, 540, 545, 558, 559, 564.

Following the disuse of Group 492 a number of layers of windblown sand and turf collapse accumulated within the building. Cutting through these were a pair of postholes (Group 555 – Contexts **551**, 552, **553**, 554), thought to be indicative of a brief period of re-use.

Plate 13 – *Group 555. Scale 20cms.*

Context No	FindsNo	Object_Keyword	Material_Keyword	Count
530	03-209	Slag	Slag	+
531	03-210	Slag	Slag	+
531	03-156	Object	Cu alloy	1
532	03-211	Slag	Slag	+
540	03-215	Slag	Slag	+
540	03-001	Decorative object	Horn?	1
540	03-006	Object	Cu alloy	3
559	03-216	Slag	Slag	+
559	03-062	Baking plate	Stone	1
559	03-123	Object	Fe	1

Table 14 – Finds from Group 641

Areas C1, C2 and C3 – English Summary

The investigation of a number of peripheral structures some distance from the main ruin area suggests that these ruins belong to the agricultural activity of the farm of Gásir. This work begins the task of placing the trade site within its landscape context, and starts the process of integrating the site into its wider environment.

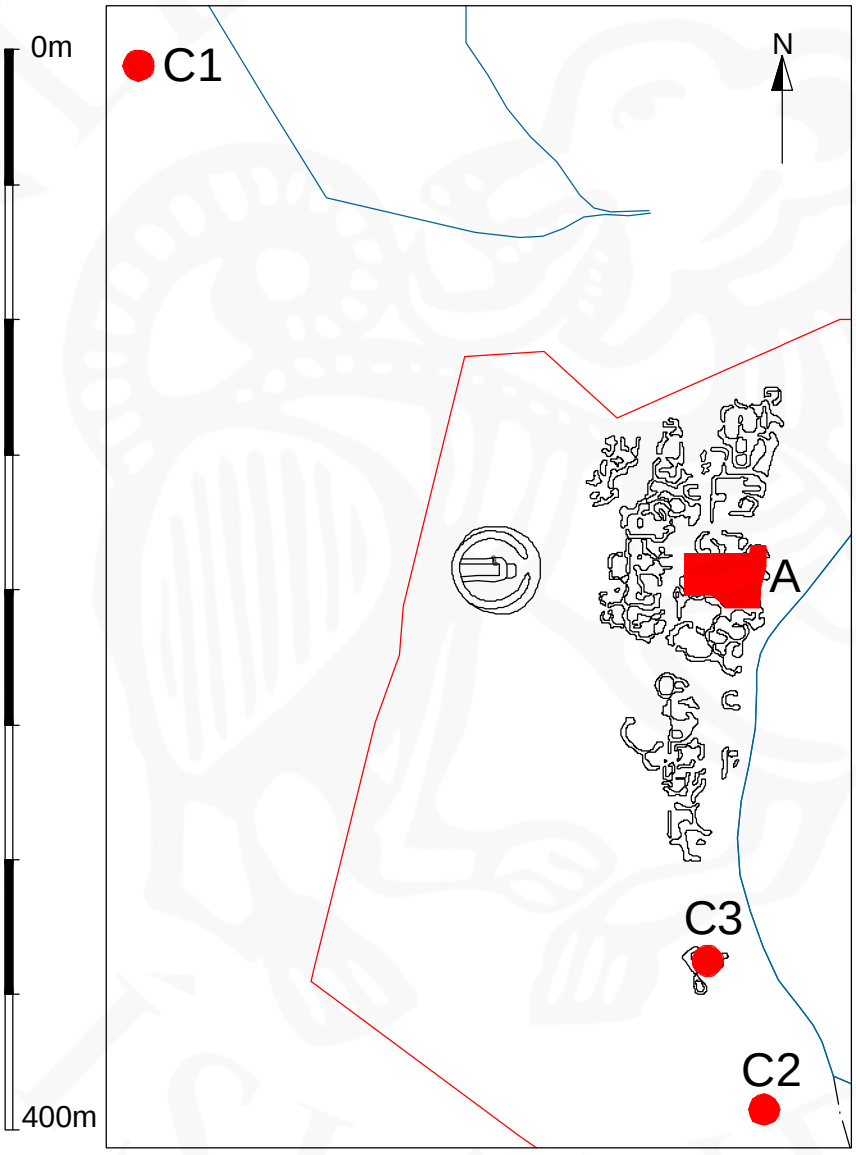


***Figure 12** - Location of peripheral structures*

C1 – Examination of this area revealed a ring shaped structure some 6m in diameter and up to 0.5m in height. One quarter of the structure was exposed, and a small trench was excavated to examine the nature of the earthwork. This appears to be formed from layers of upcast faced with turf, accentuating a naturally raised platform

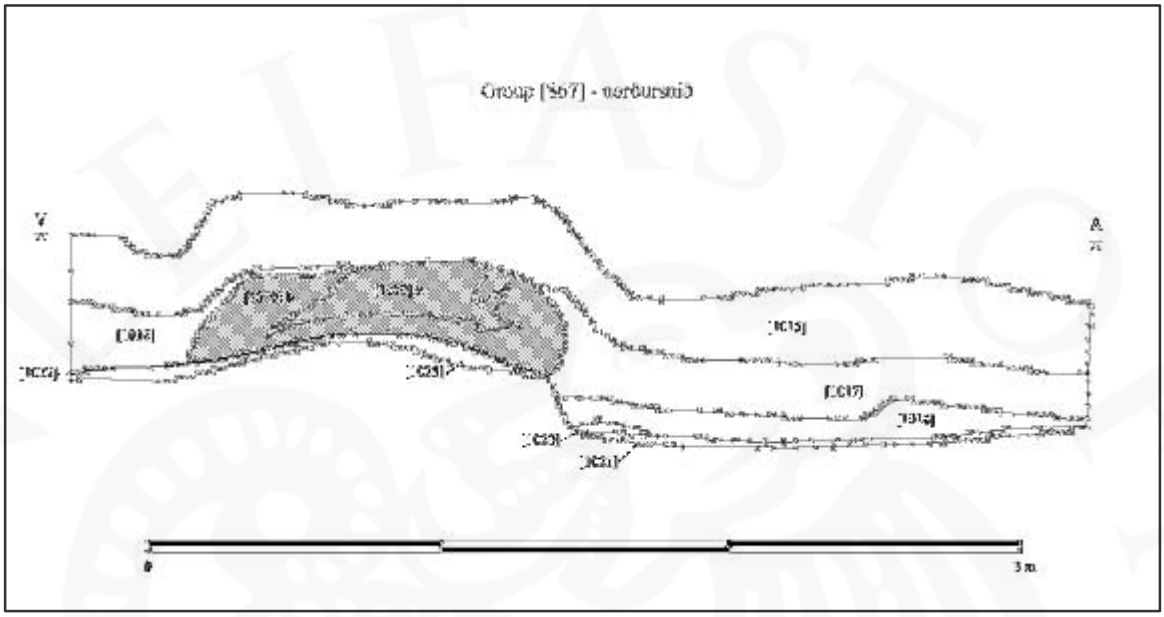
overlooking the estuary to the northeast, and areas of boggy land to the south and west. Prior to further analysis, this structure is thought to be an agricultural construction, possibly for the storage of hay (*heystæði*) – and dating to the period post 1300AD.

C2 – Structure C2 is the partially preserved remains of an ovoid building. It is clearly in the process of eroding down a cliff face that overlooks an area of marsh/tidal lagoon to the east of the main excavation area. This erosion face was cleaned, and the exposed section was recorded. Structure C2 was seen to postdate the H~1300ad tephra horizon.

C3 – A small exploratory trench was excavated through the northern wall of this structure. This revealed the remains of a stone and turf built wall, overlying earlier structural layers. However, no floor layer was encountered in the internal area of the building. Whereas the remains visible on the surface are held to be consistent with agricultural activity in the post medieval period – possibly a weening fold for sheep and lambs (*stekkur*) - the nature of the earlier layers, dating possibly to the 14th-15th centuries, is as yet unclear. A larger scale excavation will be necessary to fully understand the nature and extent of these complex remains.

Svæði C

Birna Lárusdóttir og Elín Ósk Hreiðarsdóttir



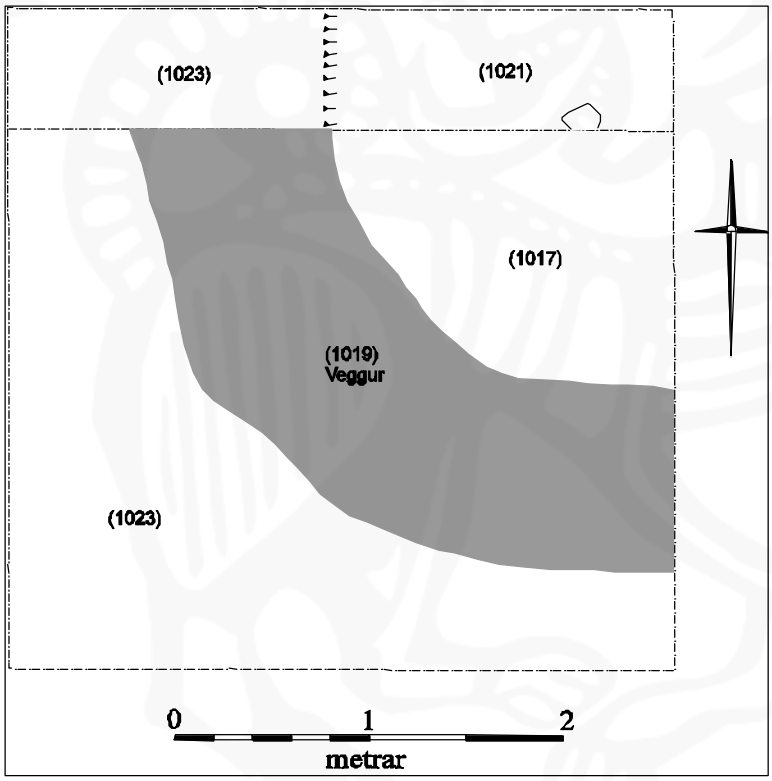
C1

Tóft C1 er rúma 270 m norðvestur af aðalrústasvæðinu á Gásum, á þýfðu en lágu holti. Vestan hennar er gróskumikið mýrlendi á stóru svæði en stöku holt inn á milli. Frá holtinu sem tóftin er á hallar landi til austurs, að sjó. Meirihluti tóftarinnar er hlaupinn í púfur og því erfitt að giska á heildarstærð hennar og fátt að segja um mögulegt hlutverk af yfirborðsummerkjum einum saman. Suðvesturhorn hennar er greinilegast. Þar eru algrónir en signir veggir sem eru nálagt því að mynda 90° horn, en alls gæti tóftin hafa verið allt að 6 x 6 m stór.

Númer	Lýsing
1015	Grasrót
1016	Torfhrun
1017	Torfhrun. Í því sjást sums staðar heilar, láréttar torfur með H-1300
1018	Lagskipt yfirborðslag
1019	Veggur
1020	Mjög blandað lag með H3 og dökkbrúnni mold
1021	Óhreyfð, rauðbrún mold
1022	H-1300
1023	H3 með fokmold efst

Torf var rist af greinilegasta hluta tóftarinnar, suðvesturhorni og var flatarmál uppgraftarsvæðisins 3,5 x 3,5 m. Inni í tóftinni var neðst og næst veggnum lítil linsa af mjög blönduðu lagi [1020], dökkbrúnu með ljósum gjóskudílum, H3. Linsa þessi

lá ofan á rauðu, óhreyfðu moldarlagi [1021]. Ofan á henni var lag sem vafalaust var einhverskonar yfirborð eða gólf [1018]. Lagið allt skiptist upp í fimm eða sex smærri lög af tvennum toga sem koma fyrir til skiptis. Annað er rauðbrún mold en hitt heldur dekkra með grárri slikju, grófkornótt. Lögin tvö blandast hvergi saman og er að sjá að þau hafi safnast upp á töluverðum tíma. Þau ná upp að veggnum en ekki upp á hann. Ofan á þeim er allþykkt lag af torfi [1017] sem líkist hruni næst veggnum en þegar fjær dregur sjást heillegri torfur og í þeim blágrátt gjóskulag, H1300. Í laginu sjást örfáar linsur af grófa laginu í [1018]. Utan við vegginn var torfhrun [1016]. Ofan á því og veggnum var svo þykkt grasrótarlag [1015].



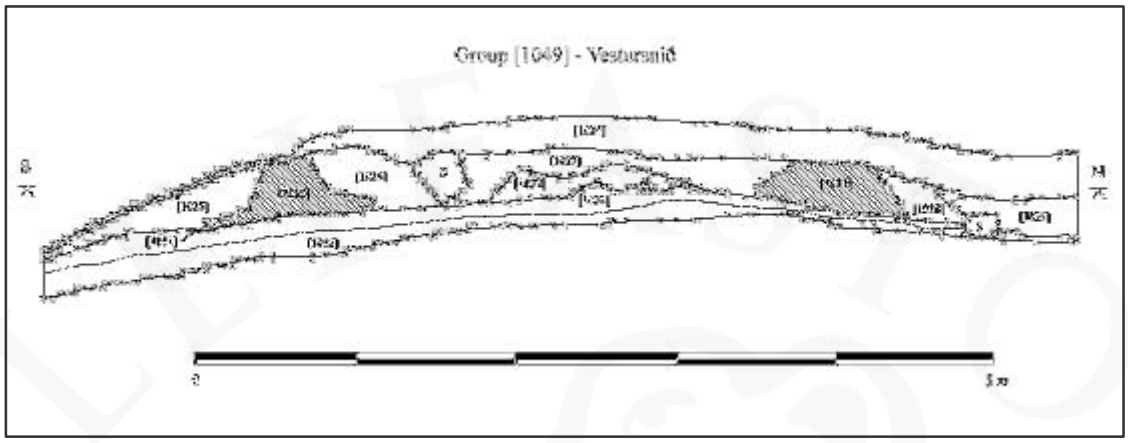
Til að skoða gerð veggjarins og tengsl laga við hann var ákveðið að grafa skurð þvert í gegnum vesturhlið tóftar, nyrst á uppgraftarsvæðinu. Skurðurinn var, líkt og svæðið, 3,5 m langur frá austri til vesturs en um 0,6 m breiður. Undir veggnum, neðst í skurðinum, var forsögulega gjóskan H3 [1023], reyndar blönduð dálítilli fokmold efst. Ofan á henni er blágrá, óhreyfð gjóska, H-1300 [1022]. Veggurinn er ofan á henni. Hann reyndist eingöngu úr torfi, ekki beinlínis hlaðinn heldur virðist fremur sem honum hafi verið hróflað upp. Byggingarefnið er tvískipt: Ytra og innra byrði veggjar eru úr lagskiptu torfi [1019b] og í því er H-1300 lagið ásamt landnámslaginu og dökkbrúnni mold. Innan í veggnum er hins vegar líkt og fylling [1019a], nær eingöngu úr H3 gjóskunni. Í sniðinu sést berlega að stungið hefur verið innan úr tóftinni og efnið notað í veggina. Stungan sést vel og gjóskulögin sem eru heil undir veggnum, H3 og H-1300, eru horfin með öllu inni í tóftinni.

Niðurstaða

Stærð og gerð tóftarinnar á yfirborði er óljós og því fátt af þeim ummerkjum einum að ráða. Mannvirkið hefur verið byggt laust eftir 1300 en nær verður ekki komist um aldurinn og engin gjóskulög gefa til kynna hvenær hætt hefur verið að nota það. Af gjóskulögum í torfi sést að lítil jarðvegsþykknun hefur verið þar sem efni var tekið, enda skammt á milli landnámslags og H-1300 í torfi. Veggir hafa ekki verið vandlega hlaðnir heldur hróflað upp. Suður- og norðursnið veggjar reyndust nokkuð ólík og bendir það til að ekki hafi verið viðhöfð sérstök vandvirkni við bygginguna.

Ekkert bendir til að tóftin hafi verið mannabústaður, enda engin viðarkol eða önnur eldsmerki að sjá og engir gripir fundust. Skepnuhús- eða aðhald kemur tæpast til greina, enda hefði þá mátt búast við troðnu og mjög blönduðu gólflagi. Yfirborðslagið inni í tóftinni bendir til að eitthvað hafi verið geymt þar, líkast til hey. Torflagið ofan á yfirborðslaginu er vafalaust hrun úr veggnum að hluta en þó sjást þar heillegar torfur, láréttar, sem gætu verið leifar af torfi sem notað hefur verið til að þekja yfir heyið. Varla þarf að efast um að slægjuland hafi verið í mýrinni vestan við tóftina og hentugt að setja hey upp á holtinu. Heystæði sjást mjög víða á sambærilegum stöðum – á þurrum holtum í mýrlendi.

C2



Tóft C2 er austast á háum bakka um 120 m suðsuðaustur af aðalrústasvæðinu á Gásum. Fyrir neðan tóftina skerst grunnt og mjótt vik inn í landið, vaxið þéttri stör en sjór flæðir greinilega upp í það á flóði. Tóftin er í dálitlum halla mót austri. Mikið hefur hrunið úr bakkanum og þannig er austasti hluti tóftarinnar að mestu horfinn. Hún er fremur greinileg á yfirborði en þó sigin, alls um 9 m A-V og 8 m N-S, nálægt því að vera sporöskjulaga. Vesturhlutinn er skýrastur en veggir fjara út til austurs, eftir því sem nær dregur bakkanum. Mest ná þeir um 0,5 m hæð á yfirborði.

Númer	**Lýsing**
1024	Grasrót
1025	Torfhrun
1026	Torfhrun
1027	Torfhrun þak?
1028	Torfhrun
1029	Áfok, blandað torfhruni
1030	Torfveggur
1031	Torfveggur
1032	Grátt fremur gróft lag, e.t.v. öskublandað
1033	Náttúrulegt lag, dökkt og sandkennt
1051	H-1300
1052	H3

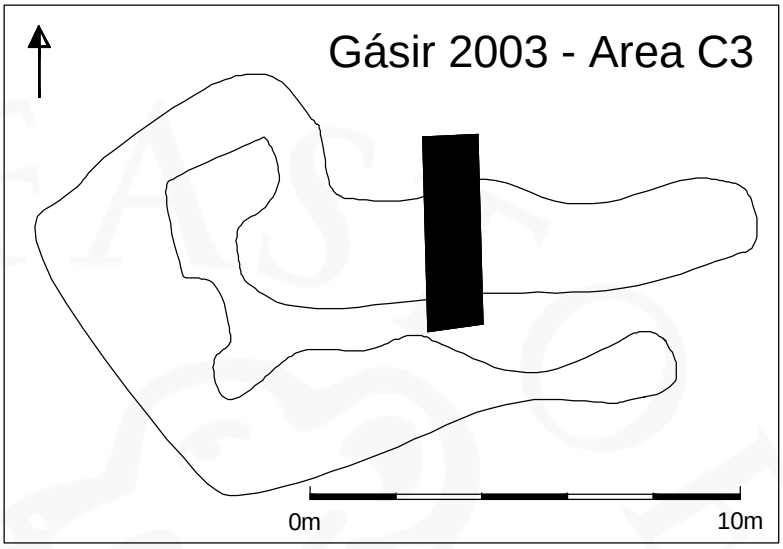
Stungið var framan úr rofabakkanum og sniðið hreinsað. Það er alls 6,5 m langt frá norðri til suðurs. Undir mannvistarlögum er H3 gjóskan [1052] óhreyfð og ofan á henni gróft, dökkbrúnt lag, náttúrulegt, líklega sandblandað [1033]. Þá sjást mjög ógreinilegar slitrur af H-1300 sunnarlega í sniðinu [1051]. Ofan á því að hluta er torfveggur, suðurveggur tóftarinnar [1030]. Neðri hluti hans og innri hlið eru býsna reglulega hlaðin en efri hlutinn skellóttur og óreglulegur. Norðarlega í sniðinu sést

svo norðurveggurinn [1031], en fjarlægð milli hans og suðurveggjar eru um 2,5 m, breidd tóftarinnar að innanmáli. Að utanmáli hefur breiddin verið um 4,5 m. Norðurveggurinn er ólíkur þeim syðri, torfið rauðleitara. Greinilegar torfrendur sjást í ytra byrði hans, strenghleðsla en aðrir hlutar eru ógreinilegri. Inni í tóftinni er greinilegt lag [1032] en hæpið að kalla það gólflag, enda er það mjög laust í sér og óblandað. Það er inni í tóftinni miðri, allt að rúmlega 20 sm þykkt en nær upp að hvorugum veggnum. Milli lagsins og suðurveggjar er stór steinn, lögulegur og kantaður, líklega úr hleðslu. Er það eini veglegi steinninn sem sést í öllu sniðinu. Torfhrun er bæði milli steins og veggjar [1026] og norðan steinsins, ofan á gráa laginu [1027]. Sömuleiðis er torfhrun utan veggja [1025], [1028] og áfok blandað torfhruni [1029]. Grasrótarlag er ofan á öllum þessum lögum en engin gjóska sést ofan á mannvistarlögum.

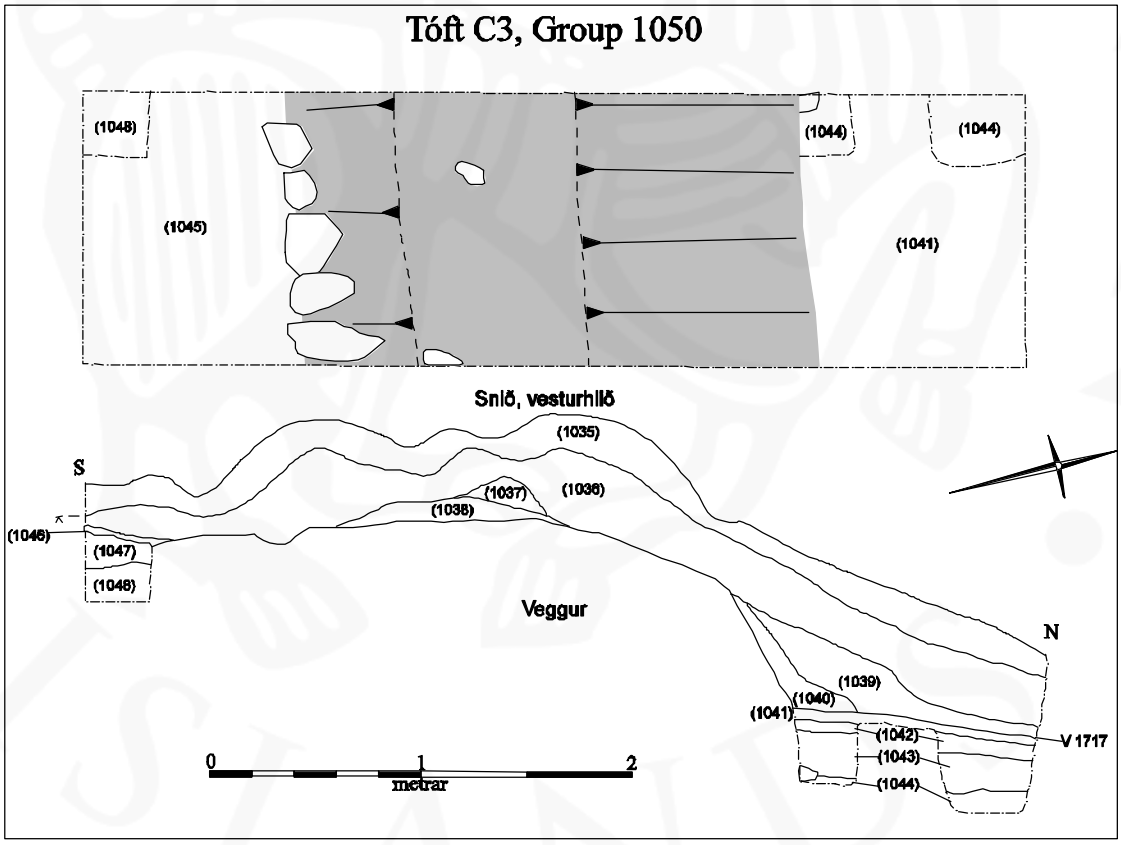
Niðurstaða

Mannvirkið var byggt eftir árið 1300 en ekki er gott að geta sér til um hlutverk þess án frekari rannsókna. Greining á gráa laginu [1032] gæti þó bætt við mikilvægum upplýsingum. Eins og áður segir líkist það ekki gólflagi þótt það gæti verið öskublandað. Fremur er eins og því hafi verið kastað inn í tóftina áður en hún féll úr notkun og fátt af því að ráða. Þess má geta að víða tíðkaðist að moka ösku eða öðru þurru efni inn í kræ á skepnuhúsum til að halda þeim þurrum og ekki útilokað að það eigi við hér. Veggir tóftarinnar virðast veigalitlir. Það er mögulegt að þeir hafi verið endurbættir einu sinni eða tvisvar, enda ekki alls staðar sams konar torf. Ekkert bendir til að menn hafi hafst við í húsinu, þ.e. engin merki sjást um eiginleg gólflög.

C3



Tóft C3 er um 20 m vestan við sjávarbakka en um 80 m sunnan við aðaltóftaþyrpinguna á Gásum. Hún er byggð norðan undir brekku og er í aflíðandi halla. Umhverfis hana eru lyngi- og grasivaxnir móar. Tóftin sjálf er hins vegar fagurgræn, vaxin grasi. Hún er 17 X 10 m að stærð, sneri austur-vestur og er tvískipt en opin til austurs. Lítill könnunarskurður var grafinn gegnum norðurvegg tóftarinnar, 4,5 X 1,3 m að stærð.



Skurður var opnaður og torf fjarlægt af allri tóftinni í skurðinum (sjá 1035). Elsta lagið utan við (norðan við) tóftina var óhreyft, náttúrulegt grágrænt leirlag (1044). Ofan á því var 20-30 cm þykkt mannvistarlag (1043a-b) sem hafði mismunandi

blæbrigði í tveimur samsíða skurðum sem teknir voru í norðurenda prufuskurðarins með 40 cm millibili. Í syðra skurðinum (1043a) var lagið ljósrauðbrúnt. Þar mátti víða greina móósku- og kolaflekki og einnig sáust torflinsur með H-1300 gjóskulaginu í. Lagið var mjög blandað og áætlað að 60-70% af því væri áfok. Neðst í laginu í nyrðra skurðinum (1043b) mátti greina fremur heillegt torf með H-1300 gjóskunni í, ofar voru kolaflekkir og ógreinilegri torflinsur (með H-1300 í). Ofan á þessu lagi var um 5 cm þykkt rauðbrúnt lag (1042), að mestu óhreyft. Í því voru örlitlir gráir flekkir hér og þar. Ofan á því var dökkgrábrúnt, einsleitt lag (1041) um 5 cm á þykkt. Efst í því mátti greina dökkt, sendið öskulag sem líklega er V-1717. Öll ofangreind lög lágu undir 1040 sem var greinileg torfhleðsla, líklega endurbætur á vegg. Það var samsett úr ljósum- og dökkum torfum og á milli var greinileg, svart, sendið gjóskulag sem líklega er það sama og í vegghleðslunni eða V-1717. Ofan á þessu lagi var torfhrun (1039). Hrunið var blandað fokmold og í því var lítið um heillegar torflinsur nema allra neðst í laginu. Torfhrunið var þykkast næst veggnum (um 20 cm en þynntist út eftir því sem norðar dró).

Númer	Lýsing
1035	Grasrót 15-20 cm
1036	Dökkbrúnt, einsleitt foklag, verður ljósleitara eftir því sem norðar dregur.
1037	Gróft kolalag, blandað mold ofan á vegghleðslu.
1038	Torfhleðsla úr litríku (rauðbrúnu, dökkbrúnt, grábrúnt) en engin gjóskulög eru greinileg.
1039	Torfhrun blandað foklagi, lítið um greinilegar torflinsur nema neðst í laginu, þar má greina bæði LNS og H-1300
1040	Blandað torflag, vegghrun. Samsett úr ljós- og dökkbrúnum linsum með greinilegu öskulagi
1041	Dökkgrábrúnt, einsleitt lag sem liggur undir vegginn. Efst í því V-1717
1042	Rauðbrúnt lag, að mestu óhreyft. Í því eru örlitlir gráir flekkir hér og þar.
1043a-b	Þykkt mannvistarlag blandað áfoki. Í syðra skurðinum (a) er það ljósrauðbrúnt með móósku- og kolaflekkjum víða og einnig torflinsum (með H-1300 í). Neðst í nyrðra skurðinum er fremur heillegt torf (með H-1300), ofar kolaflekkir og ógreinilegri torflinsur.
1044	Náttúrulegt, óhreyft grágrænt leirlag
1045	Rauðbrúnt, blandað lag, með heillegum linsum af torfi en þó frekar einsleitt og lítið hreyft.
1046	Ljósbrúnt lag, þunnt (<3 cm) með dökkri gjóskurönd, líklega torf. Líkt 1047
1047	Brúnt, fremur einsleitt, áfokslag, lítið hreyft.
1048	Náttúrulegt, óhreyft lag.

Veggurinn sjálfur var samtals um 2,4 m á þykkt og bar þess merki að vera a.m.k. frá tveimur mismunandi byggingarstigum. Einföld grjóthleðsla markaði brún veggjar að sunnan (innan). Hún var 80-90 cm norðan við suðurenda skurðarins. Steinarnir lágu í rauðbrúnu örþunnu lagi sem ekki var greinilegt í sniði (sjá 1045) og en lá yfir eldri veggnum. Steinaröndin var því hluti af yngri vegg eða yngri endurbyggingu á veggnum.

Sunnan við vegginn, inni í tóftinni var neðst óhreyft náttúrulegt lag (1048) ofan á því var dökkbrúnt, áfokslag (1047) lítið hreyft. Það var fremur þykkt eða um 15 cm. Ofan á því var ljósbrúnt lag (1046), þunnt (<3 cm) með dökkri gjóskurönd, líklega úr torfi. Utan við röndina er lagið mjög líkt 1047. Ofan á þessu lagi var hins vegar rauðbrúna lagið (1045), sem áður var getið. Ofan á veggnum var torfhleðsla, hugsanlega endurbætur (1038). Hlaðið úr litríku torfi (rauðbrúnu, dökkbrúnu og grábrúnu) en engin gjóskulög eru greinileg. Ofan á hleðslunni var um 12 cm þykkt kolalag blandað áfoksmold (1037). Lagið var ofan á norðurhluta elsta veggjarins. Ofan á þessu lagi og var dökkbrúnt, einsleitt áfokslag (1036) sem náði yfir allan skurðinn. Lagið var víða 20-25 cm þykkt. Það var dökkbrúnt og fínkornótt en var ljósara eftir því sem norðar dró. Efst í skurðinum var 15-20 cm þykk grasrót.

Niðurstaða

Af skurðinum sem tekinn var gegnum norðurvegg mannvirkis C3 er ljóst að þar er að finna a.m.k. hefur 2 byggingarstig. Suðurbrún veggjar er mörkuð með grjóti og er það greinilega yngra skeið hússins þar sem lagið sem steinarnir hvíldu í lágu ofan á nyrðri

(eldri) hluta veggjarins. Veggurinn sem sást í skurði var samtals 2,4 m á breidd en hann var mjög hruninn til norðurs. Norðan við vegg mátti einnig greina torfhleðslu úr streng sem byggð var upp að elsta hluta veggjarins og virtist síðari tíma viðgerð eða endurbygging. Í þessari viðbót var greinilegt gjóskulag sem Magnús Á. Sigurgeirsson jarðfræðingur telur líklegast að sé V-1717. Greinilegt er að þessi hluti veggjarins var byggður úr streng og virtist hlaðinn úr mjög löngum strengskornum torfum þar sem mjög langar, heillegar gjóskurendur sáust í honum. Elsta vegginn einkennir litríkt torf og H3 gjóska.

Greinilegt er að torfhleðslurnar í miðið eru eldri en steinhleðsla sem markar innri brún veggjar og sömuleiðis viðbætur/endurbygging norðan hans. Ekki var hægt að skera úr um hvort veggir norðan og sunnan elsta veggjarins voru byggðir á sama tíma.

Undir hrunvegg/viðgerð á norðurhlið liggur grábrúnt lag (1041) og einnig mjög þunnt gjóskulag frá 1717. Ekki er vitað hvort lögin liggja upp að aðalvegg. Undir þessum lögum tveimur er svo mikið mannvistarlag sem enn var greinilegt í norðurenda skurðar. Grafin var hola um 80 cm norðan við skurðinn (40 X 20 m) og þar voru enn greinileg mannvistarlög undir 1041 en þau virðast þó vera að fjara út.

Af mannvistarlögum má því greina að tóft C3 hefur a.m.k. haft 2 byggingarstig. Ekki varð vart neinna gólflaga inni í mannvirkinu og eru því litlar vísbendingar um notkun þess. Örfáir gripir (t.d. koparbrot og brýni) fundust í kolalagi (1037) ofan á vegg. Þeir gefa ekki skýra vísbendingu um aldur mannvirkisins eða notkun þess á mismunandi byggingarskeiðum.

Elstu torfhleðslur á þessum stað eru taldar frá 14.-15. öld en þær yngstu frá 18.-19. öld. Þetta bendir til að elstu leifarnar gætu verið samtíma búðarrústunum á Gásum. Ef sú er raunin er ekki ljóst hvort mannvirkið hefur haft sérstakt hlutverk á svæðinu þar sem það hefur verið stakt og utan aðal tóftaþyrpingarinnar. Viðameiri uppgraftar er þörf til að skera úr um að fullu um hlutverk og eðli eldra mannvirkis. Um hlutverk yngra mannvirkis verður heldur ekki fullyrt. Þó er líklegt að á síðari öldum (18.-19. öld) hafi aftur verið byggt á þessum stað í tengslum við búskap á bænum Gásum. Lag tóftarinnar á yfirborði og staðsetning gæti bent til að á þessum stað hafi síðar verið byggður stekkjur.

Gásir 2003 Preliminary Finds Assessment

by Dr. Colleen Batey

288 finds units were recovered during the 2003 fieldseason at Gásir, the range of material and object quantities can be seen in the tables below.

The Inorganic Assemblage

Material	Quantity*	Major types/comments
Copper Alloy	54	
Iron	49	including nails, knives, mounts
Lead	1	
Industrial debris	73	Ironworking slag
Ceramic	18	including stoneware and glazed
Sulphur	18	
Stone	44	including baking plate, whetstones
Glass	7	including vessel sherds

* in finds units

In numerical terms the inorganic material makes up the bulk of the overall finds assemblage (91.7%) and within that the industrial debris (weighing 4.779 kg overall for 73 finds units) is numerically dominant. In the case of the site at Gásir, the smaller quantity of sulphur (18 finds units) may however, have a more readily identifiable significance although it may be related at least in part to the activities indicated by the industrial debris, at least in terms of the general industrial nature of some of the deposits. In the case of the sulphur, this is a commodity which was brought to the site for onward export. It has been suggested previously that the sulphur may have been extracted elsewhere (eg Mývatnssveit) and that the centre at Gásir served a considerable hinterland (Roberts 2003, 21). Ongoing research on the sulphur trade in relation to part of a cargo of a Baltic wreck may be of considerable interest in relation to establishing wider trading contacts from Iceland.[2]

[2] Roberts 2003

The metal elements of the assemblage, numerically dominant, include copper alloy (which is universally in a poor condition, probably due to the salt rich environment) and iron, in the form of nails and knives, and a single lead find. It is most likely that the iron material is at least in part being produced on site, and relates to the industrial debris perhaps; such a port would have required boat repairs and the local production of nails would have been most sensible for that. The poor condition of the copper alloy assemblage militates against further comment at this stage, but it appears to include items of personal dress such as buttons and strap ends (see photo above, SF 24) etc.

Part of the return trade to Gásir may be seen in the stone assemblage - including 10 finds units of Norwegian stone baking plates, flat schist stones distinctively scored to facilitate even distribution of heat to the overall heating surface for the baking of flatcakes. Other imported stone items include schist whetstones amongst the 6 such items in the assemblage. Other fragments of micaceous stone, also possibly imports, have been noted, and although they are apparently unworked they were presumably part of the same cargo source. Additional pieces in the stone assemblage, such as SF 67 may be a part of a steatite vessel, again with a Norwegian origin. Flakes of flint such as SFs 69 and 70 may have been imported for strike-a-lights, although at this stage it is not certain of the original source for such material. The presence of stoneware and glazed ceramics at the site, 18 finds units in total also indicates external contacts here, and it is reasonable to assume comparable sources as those previously identified from the site and discussed by Mehler (in Roberts, 2002, 44-45) and by Roberts (2003, 20) with a Germanic source as the prime import zone. It is possible that some of the glass vessel finds may have a similar origin.

The Organic Assemblage

Material	Quantity*	Major types/comments
Bark	2	Fragments
Bone	3	including a possible spindle
Whalebone	1	
Horn	1	decorative object
Wood	1	modern
Leather	10	
Fibre/hair	5	
Textile	1	

This is numerically less than the inorganic group, comprising just some 24 finds units. However the recovery of any organic material on such a dry site is itself remarkable. At this stage little further can be said, but it should be possible to identify the bark and wood to species, and the leather to its original source. The single piece of textile may indicate local manufacture or a more exotic source. Detailed specialist study is required. The single horn item, SF1 (left) is an interesting piece. Simply carved in the form of a sea creature with intertwining tail or tendrils, the piece is complete. The sea creature may represent a sea horse, given the shape of the head and neck but it would seem to be a unique item, crafted by a sailor perhaps from the memory of something seen in warmer waters! It is difficult to be sure of a date for the piece, but it need be no older than the 17th -18th centuries.

Potential of the Assemblage

There are several parts of the asemblage which will repay further specialist analysis, the ceramics and slag of the inorganic assemblage and in the organic assemblage the leather and hair/fibres in particular. The metals all need urgent conservation investigation. Excavations at Gásir are already making a very important addition to the study of medieval pottery in Iceland. The ongoing research into the Icelandic sulphur industry will ensure a crucial role for the site at Gásir, and its external trading links provide a key to the early success of this important trade site, they may also provide an understanding of the failure of this site to continue.

Bibliography

Mehler, N., 2002
Appendix 6. The Finds, in Roberts 2002a, 44-46

Roberts, H.M., 2002a, *Fornleifarannsókn á Gásum, 2001. Framvinduskýrsla* Fornleifastofnun Íslands, FS163-01071, Reykjavík.

Roberts, H.M., 2002b, *Archaeological Investigations at Gásir, 2002. A preliminary Report.* Fornleifastofnun Íslands, FS180-01072, Reykjavík.

Roberts, H.M., 2003, *Gásir 2002. An Interim Report.* Fornleifastofnun Íslands, FS194-01073, Reykjavík.

Discussion, Conclusions and Further Work

A highly productive excavation season at Gásir in 2003 has begun to meet the aims and objectives set out above.

We are able to define a new group of rooms, and to describe their size, nature and construction techniques. The fine resolution excavation techniques are proving their worth. It is possible to isolate and describe episodes of use that may represent no more than a single day, and others that suggest some weeks. The very ephemerality of these remains is of the highest interest – it is consistent with a view of the site as a seasonal entity, occupied in part or whole for only very brief periods. These episodes of small-scale reconstruction and activity also suggest that activity at Gásir ended gradually, in an ad-hoc fashion, - a picture of slow decline rather than one of catastrophe or imposed change. Nonetheless, this same evidence includes some indications of continuity – the same spaces or rooms are built and re-built, used and re-used time and time again. What this tells us about organisation or the "ownership" of spaces is at yet unclear, but the growing body of evidence will permit the development and testing of various hypotheses.

We are also now able for the first time to examine a sizeable assemblage of artefacts from several years of excavation, and this enhances our knowledge of the types and sources of goods brought to Gásir. The assemblage of pottery is now large enough to contribute substantially to the Icelandic corpus and can also assist greatly in the refining of dating horizons (see Mehler, below). The 35 pieces collected in 2002 and 2003 alone make Gásir a site of crucial importance for the study of ceramics in Iceland, and are a vital piece of physical evidence for trade vectors into medieval Eyjafjörður.

Those trade vectors may also be informed by objects of stone, glass etc., and by the discovery of sulphur elsewhere.

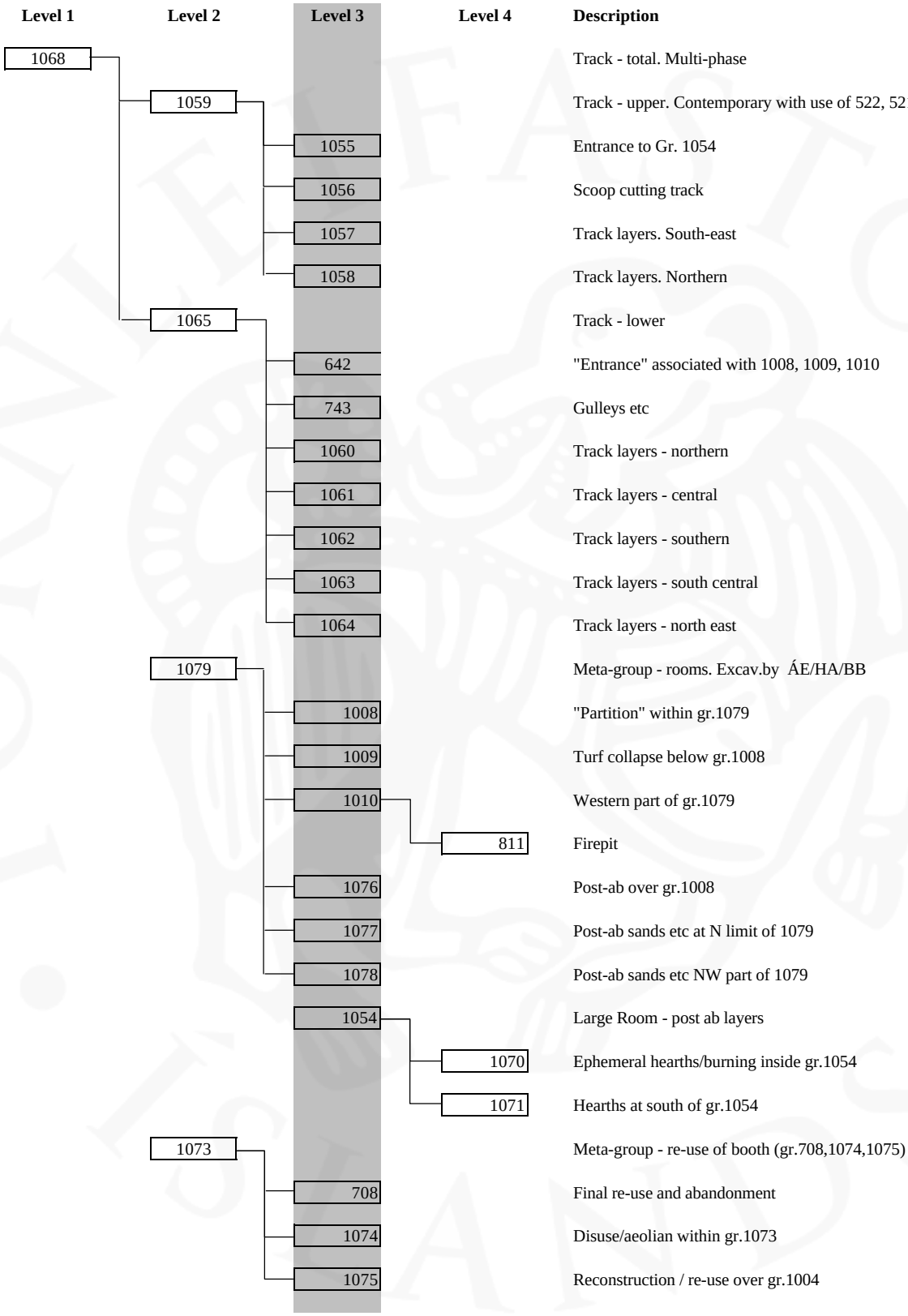
An ongoing study of the sulphur found in 2002 and 2003 is progressing well, and has been enhanced by the kind donation of a comparative sample from the Darsser Cog (see Adderley et al, Appendix 2, below).

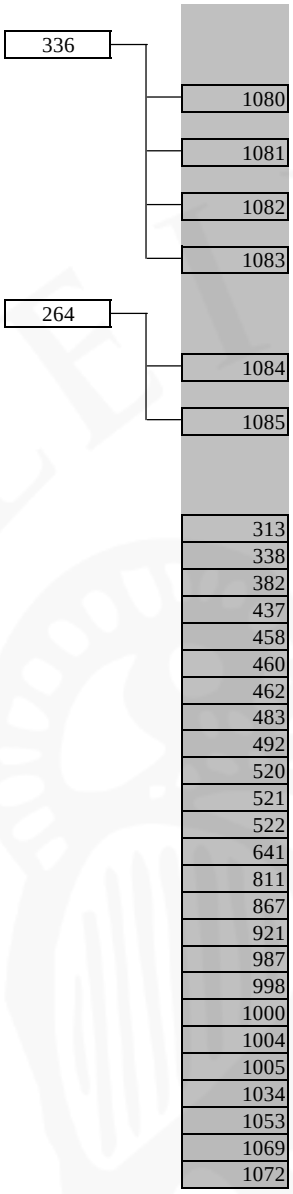
Other industrial residues – suggestive of metalworking – await further study.

The study of a large (and growing) archaeofauna (Harrison et al., below) has begun to shed light on a great many issues of interest, not least the atypical consumption patterns so clearly indicated, the putative presence of non-icelanders, and the exceptional find of a falcon bone. Possible indications of seasonality may prove of vital importance as the collection grows – these may be able to confirm the observed "temporariness" in the stratigraphic and structural record. Indications of craftworking in the faunal collection also add to developing evidence for industry at the site.

It is proposed that excavation in 2004 will continue within the area begun this year, and additionally that work will commence within the churchyard at Gásir. The results gathered so far will be presented at conference (NABO/SILA, Copenhagen May 2004), and it is hoped that this opportunity will enhance the process of international discussion and collaboration. It is hoped that a wide ranging study of comparable sites and material will place Gásir more clearly in its international context, and will highlight the extraordinary preservation and international significance of continued work at Gásir.

Appendix 1
Gásir 03 - Hierarchy of Groups





336 Meta group. Post-ab, poss re-use above groups 521, 522

1080 Later turf collapse - aeolian etc

1081 Peatash dumping etc. Re-use?

1082 Aeolian post-ab

1083 Initial post-ab turf collapse etc

264 Meta group. Wall, associated collapse, post ab.

1084 Post-ab, aeolian, in gr. 264

1085 Construction/use.

313 Including pit 301 and 299, 300, 315, 324
338 Small pit
382 Peat ash deposits
437 Cut 436 and fills. Industrial debris?
458 Hearth etc. Beneath gr.483
460 Charcoal/dung filled pit
462 Hearth and assoc layers
483 Metagroup. Sunken building/s at SE - 2002.
492 SFB. Cut 481. Hearth 630
520 Sulphur pit
521 Construction/use. Northwest room - 2002
522 Construction/use. Southwest room - 2002
641 Post ab/ backfill of sfb 492
811 Firepit
867 C1 Building
921 Post-ab phase of Cut 813
987 Recut + wall below Gr.921
998 Pit fills. Industrial - caroline
1000 Post-ab - part exc only
1004 Post-ab - beneath gr.1073
1005 Industrial layers at E loe. Lilja
1034 Room/booth - post ab fills
1053 Blocking of entrance between gr.1034 & 921
1069 Entrance to Sfb gr. 492
1072 "Passage" - linear feature at SW of gr.1054

Appendix 2

Gásir and early sulphur trade in northern Europe – analyses of processing practices and trade

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Summary

Sulphur-rich materials, have been observed in the excavations of the Gásir early trading site (c. 1160 AD – 1391 AD ~ documentary). Sulphur is an important component in the manufacture of explosives, in vermillion pigments, and is used in its raw form as an insecticide. In a vertical profile at the south-east edge of the Gásir site excavations, concentrations of sulphur-rich materials were seen in bands through the exposure. Initial interpretation was that this could be a processing pit, hearth or sulphur storage pit. *In situ* samples have been taken for analysis of the micromorphology, and at the nanoscale, the chemical and mineralogical characterisation of these materials.

Optical micromorphology is used to examine the site sedimentary context of the sulphur materials, allowing assessment to be made of processing pit, hearth and storage pit hypotheses. Observation of the sulphur materials in thin section also permits identification of processing activity. To consider the possible sources of the materials found at Gásir, raw sulphur materials materials have been collected from efflorescences at known sites of historical sulphur extraction across Iceland. Coupled with the sites in Iceland, sulphur materials have been recovered from a nautical archaeology excavation in the Baltic Sea of an early Hanseatic trading ship the Darsser Kogge (1277-1293AD ~ dendrodating). The Gásir site materials, Icelandic

source materials, and the material recovered from the Darsser Kogge, have been characterised for their elemental composition by micro-scale X-ray fluorescence and their mineralogy by micro-scale X-ray diffraction using the microfocussed synchrotron X-ray beamline at ESRF.

Results from the *in situ* Gásir site samples, first indicate that sulphur was processed at the Gásir site and that there are significant similarities in the mineralogy between these and the sulphur materials found from specific sites in Iceland, emphasising Gásir's rôle as a trading station. Second that there are similarities between the materials found at Gásir and those from the material recovered from the wreck of the Darsser Kogge, indicating a pan-European significance of Icelandic-sourced sulphur traded through Gásir.

Appendix 3

Medieval Ceramics from Gásir, 2002 and 2003

Natascha Mehler

2002

The eastern part of excavation Area A, investigated in 2002, produced a total amount of 17 fragments of medieval pottery. Finds include high medieval stoneware and earthenware, and at least three different proveniences can be identified. These are the Rhine area around Cologne with its important stoneware centre at Siegburg, the eastern part of England, represented by several fragments of Grimston ware, and The Netherlands - indicated by a body sherd of a Maiolica vessel. The date range of all recovered sherds (period of production) lies within the 13th to 15th centuries.

Find Nr.	Quantity	Context	Ware Type	Provenience	Vessel Type	Date of Production
02-098	1	001	Siegburg Stoneware	Siegburg, W Germany	Jug	Ca. 1350–1450
02-099	1	001	Rhenish (proto?)-stoneware	Rhine Area (Cologne)	-	Late 13th-15th cent.
02-104	2	001	Earthenware, Grimston	England	-	13./14th cent.
02-108	1	221	Earthenware	-	Crucible	-
02-109	1	221	Earthenware	-	Crucible	-
02-105	1	243	Grimston Earthenware	England	Jug?	13./14th cent.
02-100	1	244	Rhenish (proto?)-stoneware	Rhine Area (Cologne)	-	Late 13th-15th cent.
02-101	1	250	Rhenish (proto?)-stoneware	Rhine Area (Cologne)	-	Late 13th-15th cent.
02-106	1	283	Grimston Earthenware	England	Jug?	13./14th cent.
02-096	1	310	Siegburg Proto-stoneware	Siegburg, W Germany	Jug	13th cent.
02-102	1	352	Rhenish (proto?)-stoneware	Rhine Area (Cologne)	-	Late 13th-15th cent.
02-107	1	357	Grimston Earthenware	England	-	13./14th cent.
02-097	1	405	Siegburg Proto-stoneware	Siegburg, W Germany	Jug	13th cent.
02-112	1	405	Earthenware, Maiolica	Netherlands	Vase, albarello?	14./15th cent.
02-103	1	441	Rhenish (proto?)-stoneware	Rhine Area (Cologne)	-	Late 13th-15th cent.
02-110	1	452	Earthenware	-	Crucible	-

Table 1: Medieval pottery fragments from Gásir, found in 2002.

2003

The western part of excavation Area A, investigated in 2003, produced a total of 18 fragments of medieval pottery. As before these fragments include high medieval stoneware and earthenware. For this group four different proveniences can be identified: the German stoneware industries in the Rhine area around Cologne, those in Lower Saxony, the eastern part of England, represented by Grimston ware, and the geographical region around Denmark, northern Germany and the Netherlands, represented by a rim sherd of a redware vessel. The date range of recovered sherds

from 2003 (period of production) also lies within the 13th to 15th century. Find number 03-048 belongs to a rim fragment of a modern plate found in a covering layer. This object is excluded from further analysis.

Find Nr.	Quantity	Context	Ware Type	Provenience	Vessel Type	Date of Production
03-038	1	101	(Proto?)-stoneware	Lower Saxony, Germany	Beaker?	13./14th cent.
03-044	1	101	Earthenware, Grimston(?)	England	-	13./14th cent.
03-048	1	101	Earthenware	-	Plate	Recent
03-049	1	101	Siegburg Proto-stoneware	Siegburg, W Germany	Jug?	13th cent.
03-050	1	101	Rhenish proto-stoneware	Rhine Area (Cologne)	Jug	13th cent.
03-051	1	639	(Proto?)-stoneware	Lower Saxony, Germany	Beaker?	13./14th cent.
03-041	1	662	(Proto?)-stoneware	Lower Saxony, Germany	Beaker?	13./14th cent.
03-040	1	662	Yellow Earthenware	-	-	Medieval
03-042	1	671	Stoneware	Lower Saxony, Germany	Jug, beaker?	14./15th cent.
03-025	1	686	Rhenish proto-stoneware	Rhine Area (Cologne)	Jug	13th cent.
03-052	1	698	Lower Saxony proto-stoneware	Lower Saxony, Germany	-	13./14th cent.
03-029	1	704	Redware	Southern Scandinavia, Netherlands	Jug?	13th to early 15th cent.
03-039	1	727	Stoneware	Lower Saxony, Germany	Jug, beaker?	14./15th cent.
03-031	1	760	Siegburg proto-stoneware	Siegburg, W Germany	Jug?	13th cent.
03-046	1	779	Stoneware	Lower Saxony	Beaker?	14./15th cent.
03-045	1	925	Earthenware, Grimston(?)	England	Jug?	13./14th cent.
03-047	1	951	Stoneware	Lower Saxony, Germany	Jug, beaker?	14./15th cent.
03-043	1	960	Earthenware, Grimston	England	-	13./14th cent.

Table 2: Medieval pottery fragments from Gásir, found in 2003.

Taken together, a total of 35 sherds of medieval ceramic have been found at Gásir during the excavations of 2002 and 2003.

1. Vessels and forms

Although found in different contexts, some sherds may be matched and thus belong to a single vessel. A minimum amount of 19 different vessels can be distinguished (see fig. 1). Forms include mainly jugs of various sizes but beakers are also present. These belong to a class of drinking vessels rather than vessels used for the preparation and serving of food. Among the exceptions are the remains of two crucibles made of a coarse material, and the body sherd of what is most likely a highly decorated Albarello (see below). The fact that drinking vessels dominate the Gásir assemblage fits well with previously observed results. Of all medieval ceramics found

in Iceland some 86% of excavated vessels belong to drinking vessels[1]. The fragments 02-108 and 02-109 belong to a possible crucible, and rim fragment 02-110 to another - found above the stone pavement (context 479). Their interiors show no signs of a metal melting process. Therefore the purpose of these vessels remains unclear. In all cases the fabric is coarse with quartz inclusions and their provenance and date remains unknown.

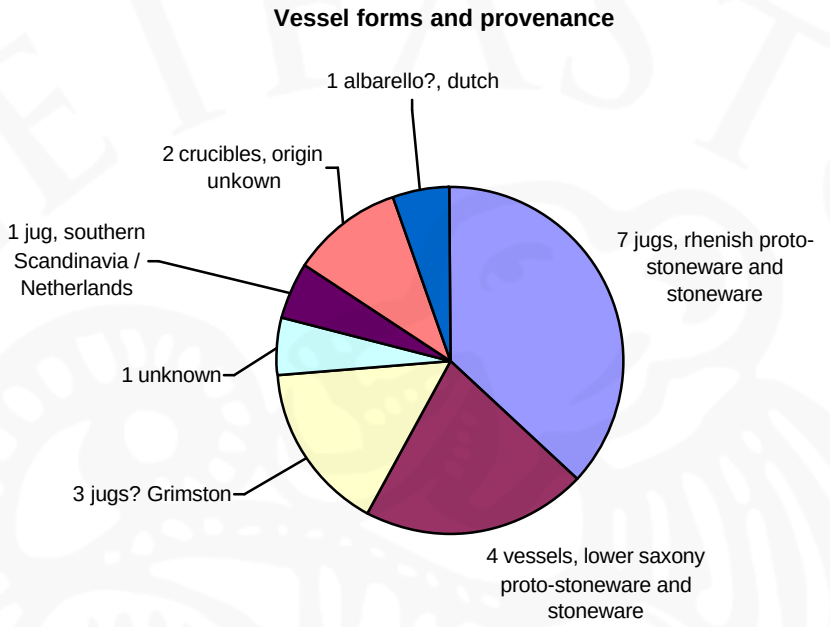


Fig. 1: Sum of vessel forms according to their origin (N = 19). Date range of identified vessels 13th to 15th century.

2. Ware types and their role in trade around the North Sea

At least 8 different ware types could be distinguished, all of them produced in Northern Europe and widely traded in that area. Five different geographical regions produced these vessels: mainly the Rhine area around the modern city of Cologne (D), Lower Saxony (D), the eastern part of England (GB), The Netherlands (NL) and the rather large geographical area of southern Scandinavia / northern Germany stretching to The Netherlands.

2.1. Rhenish proto-stoneware and stoneware

At least seven of the recovered vessels were produced in the famous stoneware industries on the river Rhine in the area around Cologne. Most important were the kilns of Siegburg, Europe's leading centre for production of stoneware vessels during the middle ages. Proto-stoneware was produced there from around 1200, whilst during the 13th century real stoneware was developed.[2] The 2002 and 2003 excavations at Gásir retrieved the remains of at least two (or possibly three) different jugs made in Siegburg: Most remarkable is the rim of a rather straight sided jug with a rim diameter of ca. 9 cm (02-096, 02-097, 03-031, 03-049). The fabric is that of proto-stoneware and the production date of the vessel can be placed in the 13th century. Another sherd (02-098) can not be assigned to a certain vessel form (although most likely a jug) but is definitely a product of Siegburg, with a fabric typical for the late 14th and 15th century.

At least five other vessels found at Gásir were manufactured in stoneware kilns in the area around Cologne. Since the fabric of those Rhenish stonewares is rather similar, it is hard to distinguish

[1] Mehler 2000, 118–119.

[2] For more information on Siegburg stoneware see Hurst et al. 1986, 176–184 and Stephan 1983, 99–104.

between products of e. g. Köln, Aachen and other places. Thus their identification must at present remain as "Rhenish". The jug represented by rim sherd 03-025 and frilled footring 03-050 is also made of proto-stoneware of the 13th century, possibly also made at Siegburg. Five other fragments (02-099, 02-100, 02-101, 02-102, 02-103) could belong to either four or five different (proto?)-stoneware vessels, but due to their small size dating, provenance and vessel identification is difficult. The Rhine area is suggested as a place of origin, and dating to the late 13th - 15th century.
Stoneware originating in the Rhine area has previously been found at Gásir during the excavation in 2001 (Area A), where three fragments were recovered, all dating to the 14th or 15th century.[3] Rhenish stoneware products such as Siegburg ware, Langerwehe ware and Raeren ware dominate the collection of medieval ceramics in Iceland, and can be found in all regions of the island (e. g. at Viðey, Stóraborg, Skálholt, Bessastaðir and Tunga).[4] The two fragments found in Gásir in 1986 could be identified as proto-stoneware products from Langerwehe, dating to the 14th century.[5]

2.2. Lower Saxony proto-stoneware and stoneware
At least four vessels were made in the other main European stoneware production area in Lower Saxony, Germany, e.g. at Duingen, Bengerode or Coppengrave.[6] A small (proto?)-stoneware beaker with a frilled footring is represented by sherds 03-038, 03-041 and 03-051. The fragments were found close together in post abandonment layers. Of similar fabric, although partly covered with salt glaze, is another vessel (jug or beaker) (03-039, 03-042, 03-047), most likely made in the 14th century. Rim 03-046 belongs to another salt-glazed beaker with an upright rim. Its date is difficult to discern, most likely 14th to 15th century. Of an older date (13th to 14th century), is a proto-stoneware vessel represented by small body fragment 03-052.
Proto-stoneware and stoneware from Lower Saxony has been found in Iceland at several sites: Reykjavík, Viðey, and Skálholt.

2.3. English earthenware
Eight ceramic fragments found at Gásir during the excavations in 2002 and 2003 are of English origin and were all most likely produced at Grimston, a famous centre of ceramic production close to King's Lynn, on the eastern coast of England.[7] The sherds could belong to ca. three different vessels, so called "highly decorated" jugs of the 13th and 14th century, where the outer surface is partly covered with a characteristically green lead glaze with ornamental brown stripes. One jug is represented by fragments nr. 02-107, found beneath the sulphur pit (Group 520), and also 02-106. The other fragments 02-104, 02-105, 03-043, 03-044 and 03-045 were found all over the site, mostly in post-abandonment layers.
Grimston ware has previously been found in Iceland during excavations at Bessastaðir (min. one, max. two vessels), Stóraborg (one vessel) and Þingvellir (min. one vessel) – all places in south and south-west Iceland.[8] Previous excavation at Gásir in 1986 revealed a fragment of earthenware of east English origin.[9]

2.4. North-european redware
Fragment 03-029 is a rim sherd of a redware jug, covered at the inner and outer surface with patches of orange lead glaze. This ware type is common during the 13th, 14th and early 15th century in a large north European area and can be found all over southern Scandinavia, northern Germany and The Netherlands.[10] A closer geographical identification is not possible at present, as

[3] Mehler 2001, 44–45.
[4] Mehler 2000,45–50.
[5] Mehler 2000, 73–75.
[6] For more information on lower Saxony stoneware see Stephan 1983, 105–110.
[7] For more information on Grimston ware see e. g. McCarthy / Brooks 1988, 266 ff.
[8] Mehler 2000, 38, 61–65, 89–95, 112–114.
[9] Mehler 2000, 75.
[10] For information on e. g. danish redware see Madsen 1983.

is the case with similar redware fragments found in sites as Gautavik, Stóraborg and Viðey, a distribution stretching from the south-east to the south-west of Iceland.[11]

2.5. Dutch Maiolica

The term "Maiolica" is generally used for Dutch earthenware with a thin tin glaze on one side and lead glaze on the other. The fabric is mostly buff to reddish and the vessels are often highly decorated with polychrome patterns on the outside. The origin of maiolica ware lies in Italy and Spain, and Dutch potters took over production during the late middle ages. It was long assumed that Dutch maiolica was made from only the end of the 15th century until the 18th and 19th century and did not appear earlier than ca. 1475.[12] However, recent research has shown that maiolica was already made in The Netherlands by the 14th century.[13] A fragment of maiolica found in Gásir in the year 2002 could support this result. Body sherd 02-112 is made of a reddish fabric, the outside is covered with white tin glaze and decorated with blue and brown vertical stripes, the inside is covered with green lead glaze. The upright body with a diameter of ca. 6 cm suggests the vessel form to be the so called "albarello", a vase like vessel used for the storage of medical liquids or powders. Dutch maiolica has previously been found in Iceland on a ship wreck close to the island of Flatey, and also at Reykholt, Kópavogur, Bessastaðir, Bergþórshvoll and Stóraborg, but all of these are from postmedieval contexts.[14] The sherd found at Gásir is the first one recovered in a late medieval context and is thus exceptional. Further analysis is suggested in order to confirm its Dutch origin as it could possibly be a Spanish or Italian piece and thus maybe an even older product. If the putative end of Gásir as a trade site at or about 1400 can be confirmed, the maiolica fragment would then also be of great interest for Dutch ceramic research, since early Dutch maiolica is thus far unknown from places outside the Netherlands.

2.6. Yellow earthenware of unknown origin

Fragment 03-040 is a small wheel thrown body sherd made of yellow earthenware with no traces of glaze. Fabrics like this can be found all over Germany and other countries. The provenance remains unknown, and its dating is definitely medieval, but without a closer limit.

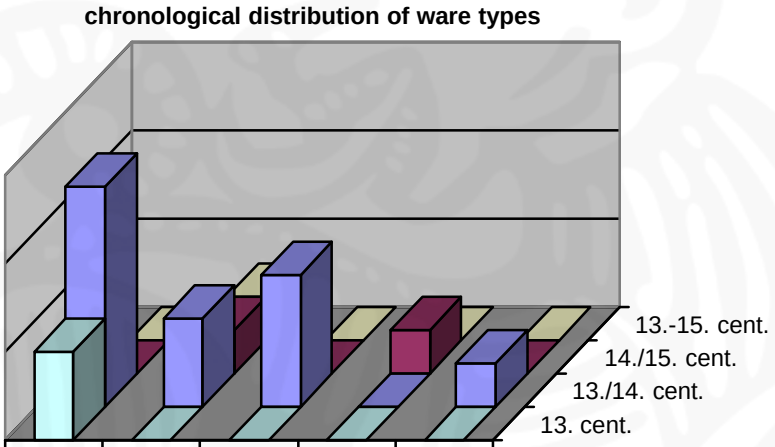
The assemblage of ceramic fragments found at Gásir during the excavations in 2002 and 2003 belong to ware types widely traded in the countries around the North Sea. The result for provenience and dating corresponds well with the general trend in medieval imported ceramics found in Iceland. During the 13th and 14th century wares from the Rhine Area, Lower Saxony and England dominate the Icelandic material, and this is also the case with the ceramic collection found at Gásir.[15] The transportation and trade of Rhenish, especially Siegburg stoneware (but also lower Saxonian stoneware) was mainly organized by Hanseatic merchants.[16] It is unlikely that these vessels came directly from their production sites to Gásir. From 1302 it was forbidden for foreign merchants to bring their items further than the Hanseatic city of Bergen on the western coast of Norway. The German stoneware fragments found at Gásir are much more a sign of indirect trade with the Hansa. It is most likely that these vessels were originally traded to Bergen or England, where all ware types discussed here have been found in great quantities, and from there brought further to Gásir.[17] Written sources mentioning ships arriving at and departing from Gásir do exist, but their information is limited. It is also possible that some of the 13th century fragments mentioned here came via the trading post at Trondheim, Norway. In 1232 Íslendinga

[11] Mehler 2000, 44–45.
[12] Hurst et al. 1986, 117–127.
[13] Ostkamp 2000.
[14] Sveinbjarnardóttir 1996, 108–109.
[15] Mehler 2000, 126–130.
[16] Stephan 1996, 96 ff.
[17] Mehler 2000, 126–128.

saga mentions a messenger from Trondheim arriving at Gásir.[18] The ware types discussed above have also been found in large numbers there.[19]

3. Ceramics and the end of Gásir

One important research question regarding the assemblage of ceramics found at Gásir is whether the sherds can provide a dating ceiling for the trading post at Gásir. Are there pottery fragments which can be securely dated to the 15th century? The majority of ceramic fragments clearly belong to the 13th and 14th centuries (see fig. 2). This fact may support an end of Gásirs' activity around 1400. No fragment can with any certainty be stated to be more recent than this date. However, the production period of two of the ceramic fragments is rather wide, and thus a date of manufacture in the 15th century is also possible. This is the case with lower Saxonian rim sherd 03-046, which could be of 15th century date, and the Dutch maiolica fragment 02-112, which could also be of that date. In both cases it is also possible that the vessels were made in the 14th century, so they should not be taken as proof of ongoing activity at Gásir beyond c.1400.



	Rhine Area	Lower Saxony	East England	Nether-lands	south Scandi-navia
13. cent.	2	0	0	0	0
13./14. cent.	5	2	3	0	1
14./15. cent.	0	1	0	1	0
13.-15. cent.	0	1	0	0	0

Fig. 2: Chronological distribution of ware types found at Gásir (2002 and 2003) (N = 16, vessel number). Not included are the crucibles, the modern plate and the unknown yellow earthenware.

4. Resumé

A total of 35 sherds of medieval ceramic have been found at the site of Gásir during excavation in 2002 and 2003. The fragments belong to a minimum of 19 different medieval vessels, all dating to the 13th to 15th centuries. The oldest ceramic fragments found at Gásir so far date to the 13th century, e.g. a Siegburg jug represented by fragments nr. 02-096, 02-097, 03-031, 03-049. A number of 13th and 14th century proto-stoneware fragments could also be identified, and these are rather rarely found amongst imported ceramic material in Iceland. The ceramic assemblage is rather homogenous in its date span and all fragments correspond well with the suggested dates of activity at the trading site. Since structures below the tephra ~ H 1300 have not been excavated yet, the dating of recovered pottery fragments fits well with the stratigraphic evidence. The proto-

[18] Roberts 2001, 24.
[19] See Reed 1990.

stoneware products of the 13th century could easily be deposited later than ca. 1300. Since hardly any pottery prior to the 12th century has been found in Iceland[20] the lack of ware types older than 13th century at Gásir is not surprising.
The total amount of ceramic fragments found during these excavations at Gásir is exceptional. The study of all medieval ceramic fragments found in Iceland has shown a total of circa 30 13th and 14th century vessels.[21] The estimated minimum sum of 19 vessels recently found at Gásir inreases this number by more than 60 %.

Catalogue:
Abrevations: bd = base diameter; c = context; d = dating; p = provenience; rd = rim diameter; th = thickness of wall

02-096: Jug, rim and handle, proto-stoneware, beige to light grey fabric, slightly brownish outside, no salt glaze, rd ca. 90 mm, th 5 to 6 mm, upright rim with collar, grooved strap handle thumbed where attached, rilled neck, cordon at the junction with the shoulder; matching 02-097; d 13th cent.; p Siegburg, Germany; c 310.

02-097: Jug, body sherd, proto-stoneware, beige to light grey fabric, brownish outside, no salt glaze, th 5 to 6 mm; matching 02-096; d 13th cent.; p Siegburg, Germany; c 405.

02-098: Jug? Body sherd, stoneware, beige to light grey fabric, brownish-reddish flammed outside, deep rilling inside, th 5 mm; d 14./15. cent.; p Siegburg, Germany; c 001.

02-099: Vessel form unknown, body sherd, (proto?)-stoneware, beige fabric, brown slip outside, th 3 mm; d late 13th to 15th cent.; p Rhine area, Germany; c 001.

02-100: Vessel form unknown, body sherd, (proto?)-stoneware, beige fabric, th 3 mm, junction to footring; d late 13th to 15th cent.; p Rhine area, Germany; c 244.

02-101: Vessel form unknown, body sherd, (proto?)-stoneware, beige fabric, th 2 mm; d late 13th to 15th cent.; p Rhine area, Germany; c 250.

02-102: Vessel form unknown, body sherd, (proto?)-stoneware, beige fabric, th 3 mm; d late 13th to 15th cent.; p Rhine area, Germany; c 352.

02-103: Vessel form unknown, body sherd, (proto?)-stoneware, beige fabric, brownish outer surface, th 3 mm; d late 13th to 15th cent.; p Rhine area, Germany; c 441.

02-104: Jug? Two body sherds, earthenware, dark grey fabric with buff surface, green lead glaze outside, th 3 to 4 mm; d 13./14th cent.; p Grimston, England; c 001.

02-105: Jug? Rim sherd, earthenware, dark grey fabric with buff interior, green lead glaze outside, rd ca. 100 mm, th 4 mm, upright rim; d 13./14th cent.; p Grimston, England; c 243.

02-106: Jug, rim sherd, earthenware, dark grey fabric with buff surface, green lead glaze and brown glazed application outside, th 4 mm, upright rim with collar; prob. same vessel as 02-107; d 13./14th cent.; p Grimston, England; c 283.

02-107: Jug? Body sherd, earthenware, dark grey fabric with buff surface, green lead glaze outside, th 4 mm; prob. same vessel as 02-106; d 13./14th cent.; p Grimston, England; c 357.

02-108: Crucible, base sherd, earthenware, no potters wheel, beige fabric, quartz inclusions, no glaze, bd ca. 30 mm, th 2 to 4 mm, flat base; same vessel as 02-109? d unknown; p unknown; c 221.

02-109: Crucible, rim sherd, earthenware, no potters wheel, beige fabric, large quartz inclusions, no glaze, groove on top of rim, rd ca. 50 mm, th 5 mm; same vessel as 02-108? d unknown; p unknown; c 221.

02-110: Crucible, rim sherd, earthenware, beige fabric, quartz inclusions, greenish glaze on top of rim and inside, rd ca. 50 mm, th 4 mm; d unknown; p unknown; c 452.

02-112: Albarello or vase? Earthenware, maiolica, reddish fine fabric, white tin glaze outside with brown and blue striped decoration, light green lead glaze inside, th 7 mm, body diameter ca. 60 mm, upright body; d 14./15th cent.; p The Netherlands? c 405.

[20] Mehler 2000, 132.
[21] Mehler 2000, 129 fig. 27.

03-025: Jug, rim sherd, proto-stoneware, light grey fabric, light brown wash inside, brown slip outside, rd ca. 90 mm, th 4 to 5 mm, upright rim, short neck with rillings, attachment of strap handle; same vessel as 03-050; d 13th cent.; p Rhine area, Germany; c 686.

03-029: Jug, rim sherd, redware, bright red fine fabric, patches of orange lead glaze inside and outside, rd ca. 70 mm, th 5 mm, upright rim with rillings outside, collar inside; d 13th to early 15th cent.; p southern Scandinavia / northern Germany / The Netherlands; c 704.

03-038: Beaker? Base sherd, (proto?)-stoneware, grey fabric, brown slip inside, th 2 mm, bd ca. 50 mm, frilled footring; same vessel as 03-041, 03-051; d 13./14th cent.; p Lower Saxony, Germany; c 101.

03-039: Jug, beaker? Body sherd, stoneware, grey fabric, brown slip inside, partly dark brown salt glaze outside, th 2 to 3 mm, rilling outside; same vessel as 03-042, 03-047; d 14./15. cent.; p Lower Saxony, Germany; c 727.

03-040: Vessel form unknown, body sherd, wheel thrown yellow earthenware, fine yellow fabric, no glaze, th 2 to 3 mm; d medieval; p unknown; c 662.

03-041: Beaker? Body sherd, (proto?)-stoneware, grey fabric, brown slip inside, th 2 mm, same vessel as 03-038, 03-051; d 13./14th cent.; p Lower Saxony, Germany; c 662.

03-042: Jug, beaker? Body sherd, stoneware, grey fabric, brown slip inside, partly dark brown salt glaze outside, th 2 to 3 mm, rilling outside; same vessel as 03-039, 03-042; d 14./15. cent.; p Lower Saxony, Germany; c 671.

03-043: Jug? Body sherd, earthenware, dark grey fabric with buff interior, green lead glaze outside, th 3 to 4 mm; d 13./14th cent.; p Grimston, England; c 960.

03-044: Jug? Body sherd, earthenware, dark grey fabric with buff to reddish outer surface, no glaze, th 4 mm; d 13./14th cent.; p Grimston, England; c 101.

03-045: Jug? Base sherd, earthenware, dark grey fabric with buff to reddish outer surface, small patches of green lead glaze, th 4 mm; d 13./14th cent.; p Grimston, England; c 925.

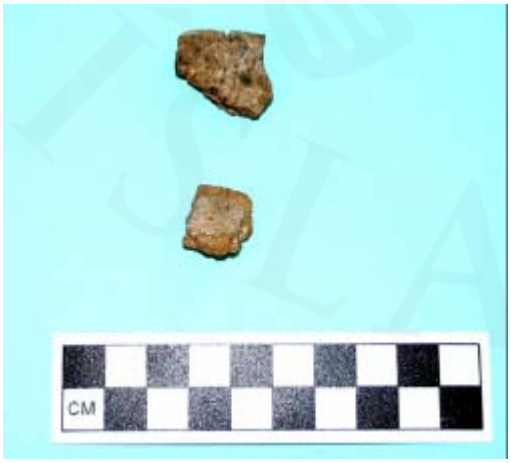
03-046: Beaker? Rim sherd, stoneware, grey fabric, dark purple iron slip inside and outside, rd ca. 70 mm, th 2 to 3 mm, upright rim; d 14./15. cent.; p Lower Saxony, Germany; c 779.

03-047: Jug, beaker? Body sherd, stoneware, grey fabric, brown slip inside, partly dark brown salt glaze outside, th 2 to 3 mm, rilling outside; same vessel as 03-039, 03-042; d 14./15. cent.; p Lower Saxony, Germany; c 951.

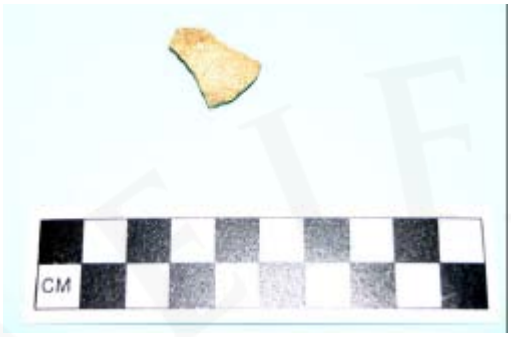
03-050: Jug, base sherd, proto-stoneware, light grey fabric, light brown wash inside, brown to dark brown slip outside, bd ca. 180 mm, th 8 mm, frilled footring; same vessel as 03-025; d 13th cent.; p Rhine area, Germany; c 101.

03-051: Beaker? Body sherd, (proto?)-stoneware, grey fabric, brown slip inside, th 2 mm; same vessel as 03-038, 03-041; d 13./14th cent.; p Lower Saxony, Germany; c 639.

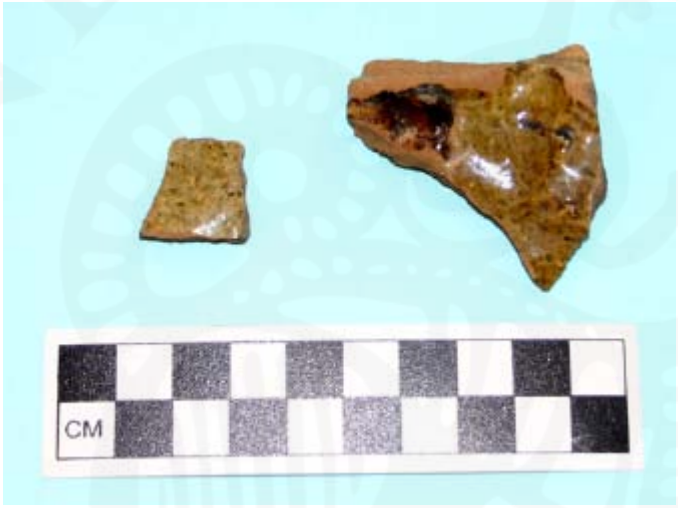
03-052: Vessel form unknown, body sherd, proto-stoneware, dark grey fabric, brownish wash inside and outside, rilling outside, th 3 mm; d 13./14th cent.; p Lower Saxony, Germany; c 698.



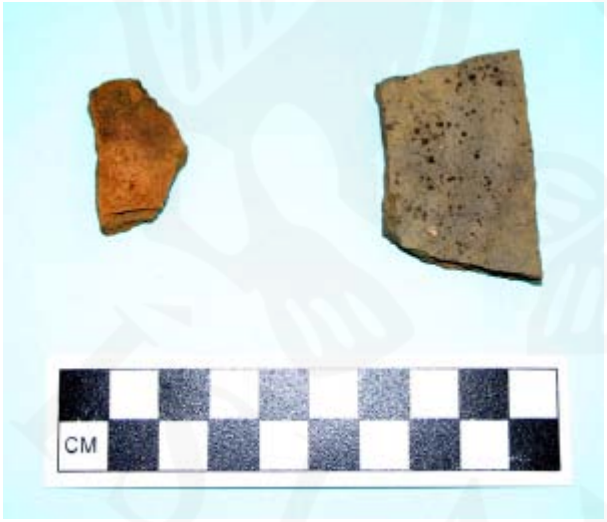
Crucible fragments 02-108 (below) and 02-109 (top)



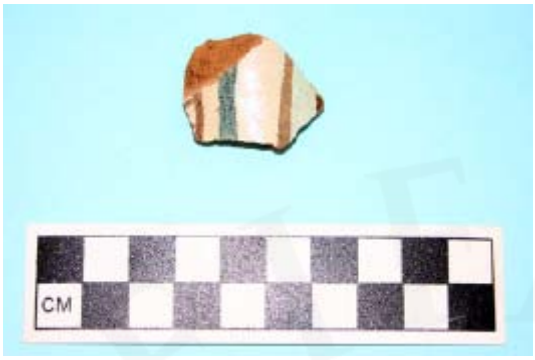
Unknown yellow earthenware 03-040

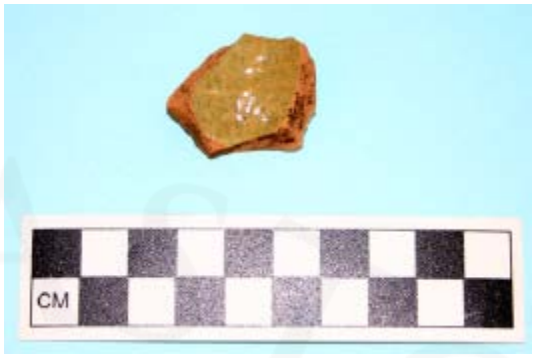


Grimston ware 02-106 (right) and 02-107 (left)



Grimston ware: body sherd 03-044 (left) and interior of base sherd 03-045 (right)



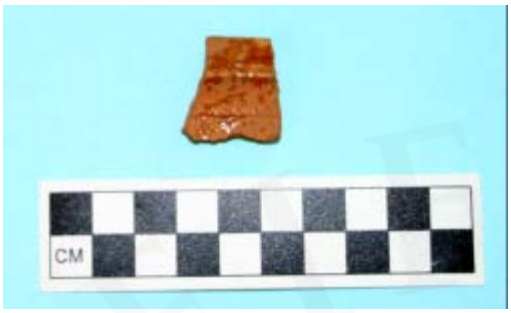


Dutch (?) Maiolica 02-112 outside (left) and inside (right)

Lower Saxony stoneware 03-039 (base left), 03-042 (base right), 03-047 (top)

Siegburg proto-stoneware jug 02-096 (rim), body sherd 02-097 (below), 03-031 (left)

Siegburg stoneware 02-098



Southern Scandinavian / northern German / dutch redware 03-029

Rhenish (proto?)-stoneware 02-100

Lower Saxony (proto?)-stoneware 03-038 (top), 03-041 (left), 03-051 (right).

Rhenish proto-stoneware: rim 03-025 and base 03-050

Bibliography:

Guðrún Sveinbjarnardóttir, 1996, *Leirker á Íslandi. Pottery found in excavations in Iceland.* Rit Hins íslenska fornleifafélags og Þjóðminjasafns Íslands 3. Reykjavík.

Hurst, John G., Neal, David S., Van Beuningen, H.J.E, 1986, *Pottery produced and traded in north-west Europe 1350–1650.* Rotterdam Papers VI. Rotterdam.

Madsen, H.J., *An introduction to Danish medieval ceramics*. In: Davey, Peter, Hodges, Richard (eds.), Ceramics and Trade. The production and distribution of later medieval pottery in north-west Europe. Papers derived from the Proceedings of the Medieval Pottery Research Group´s annual conference at Hull, 1980. Sheffield. Ps. 187–193.

McCarthy, Michael R., Brooks, Catherine M., *Medieval Pottery in Britain AD 900–1600.* Leicester.

Mehler, Natascha, 2000, *Die mittelalterliche Keramik Islands.* Unpublished Magister dissertation Universität Bamberg. Vol. I: Text, Vol. II: Katalog.

Mehler, Natascha, 2001, *The Finds*. In: Roberts, H.M., 2001, *Fornleifarannsókn á Gásum / Archaeological Research at Gásir, 2001. An Interim Report / Framvinduskýrsla*, ps. 44–48. Fornleifastofnun Íslands, FS163-01071, Reykjavík.

Ostkamp, Sebastian, 2000, *Vertiende-eeuws tinglazuur aardewerk uit de Nederlanden*. Rotterdam Papers 11, ps. 282–291. Rotterdam.

Reed, Ian, 1990, *1000 years of pottery. An analysis of pottery trade and use.* Meddelelser Nr. 25. Trondheim.

Roberts, H.M., 2002, *Gásir 2002. An Interim Report.* Fornleifastofnun Íslands, FS194-01073, Reykjavík.

Stephan, Hans-Georg, 1983, *The development and production of medieval stoneware in Germany.* In: Davey, Peter, Hodges, Richard (eds.), Ceramics and Trade. The production and distribution of later medieval pottery in north-west Europe. Papers derived from the Proceedings of the Medieval Pottery Research Group´s annual conference at Hull, 1980. Sheffield. Ps. 95–121.

Stephan, Hans-Georg, 1996, *Deutsche Keramik im Handelsraum der Hanse*. In: Wiegelmann, Günter, Mohrmann, Ruth (eds.), Nahrung und Tischkultur im Hanseraum. Beiträge zur Volkskultur in Nordwestdeutschland Bd. 91. Münster. Ps. 95–125.

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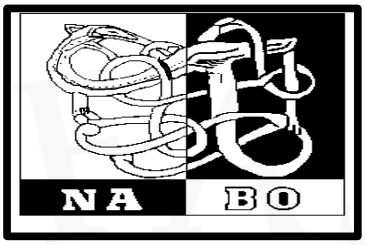
Appendix 4



Interim Report of Animal Bones from the 2003 Excavations at Gásir, Eyjafjörður, N Iceland

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Seth Brewington
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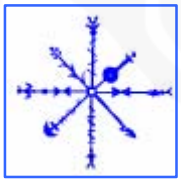

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April 26th 2004

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A product of the North Atlantic Biocultural Organization (NABO) Research Cooperative and the Leverhulme Trust funded "Landscapes Circum Landnám" Project

Fig 1. Gásir 2003 – Gyrfalcon
Photo: Daniel Bergman Photography

Executive Summary

Archaeological excavations carried out in the summer of 2003 at the site of Gásir in Eyjafjörður near the modern city of Akureyri directed by Howell Roberts of *Fornleifastofnun Íslan*ds (Archaeological Institute Iceland, FSl) for *Minjasafnið á Akureyri* (Akureyri Museum) produced a substantial number of animal bones, whose initial analysis is reported here. Analysis has been carried out by Dr.s Jim Woollett and Tom McGovern, and Ph.D. students Ramona Harrison and Seth Brewington at the CUNY Northern Science & Education Center laboratories as part of the North Atlantic Biocultural Organization cooperative effort, with funding from the UK Leverhulme Trust. The 2003 excavations were part of a larger scale long term effort to investigate the remains of the early trading center at Gásir and to place the site in a regional and historical perspective. Investigations will continue at the site, and this report is thus only a working paper to be updated and replaced as more material becomes available for study. The total animal bone collection (archaeofauna) analyzed from the 2003 season comprised 5,067 fragments, of which 2,240 could be assigned to a taxon. Together with the faunal remains analyzed in the previous year, the total NISP 2002/2003 represents 3,088 out of a TNF of 7,168.

The species present include domestic cattle, sheep, goat, horse, and pig as well as seal, whale, bird and fish remains. It should be mentioned that the 2003 collection also contained a walrus tooth (context 101), dog bones (contexts 655, 662), arctic fox (contexts 101, 583, 617), as well as harp seal (contexts 617,684,730,756), and one **gyrfalcon** bone (context 756). Domestic mammal bones make up about half of the total speciated archaeofauna (ca 51%), fish being the next most common taxa (ca 43 %). There is a high abundance in cattle bone, with a caprine/cattle ratio of about 1.82 caprine bone for every cattle bone. The high percentage of cattle bone is similar to very high status late medieval sites in S Iceland (Víðey being most similar), with a majority of the faunal remains representing cattle/caprines butchered/consumed at an age of high quality meat condition. The presence of pig remains should be mentioned, since by late medieval times, Icelandic pigs are in general no longer present in the faunal assemblages.

While the domestic mammals amount to about half of the faunal assemblage, there is an almost equal amount of fish fragments present in the Gásir 2002/03 collection. Since the fish bones are not very well preserved, only a part of the elements was usable for analysis. From the 2003 fish remains, almost all analyzed elements are postcranial, with hardly any thoracic vertebrae present. This pattern suggests that the occupants were consuming some form of preserved fish rather than fishing themselves. Dog gnawing is visible on bones, and the 2003 excavation yielded 3 dog elements (contexts 655, 662) as further evidence for the presence of the species.

Butchery patterns include typical late medieval Icelandic patterns, except for a puzzling shortage of characteristic biperforated sheep metapodials, which may indicate the presence of non-Icelandic consumers. Further research questions center on the nature of provisioning of the site, context-specific bone associations and activity areas, bone and horn craft working, possible indicators of multiethnic foodways, and social status system.

Fig. 2 NISP categories

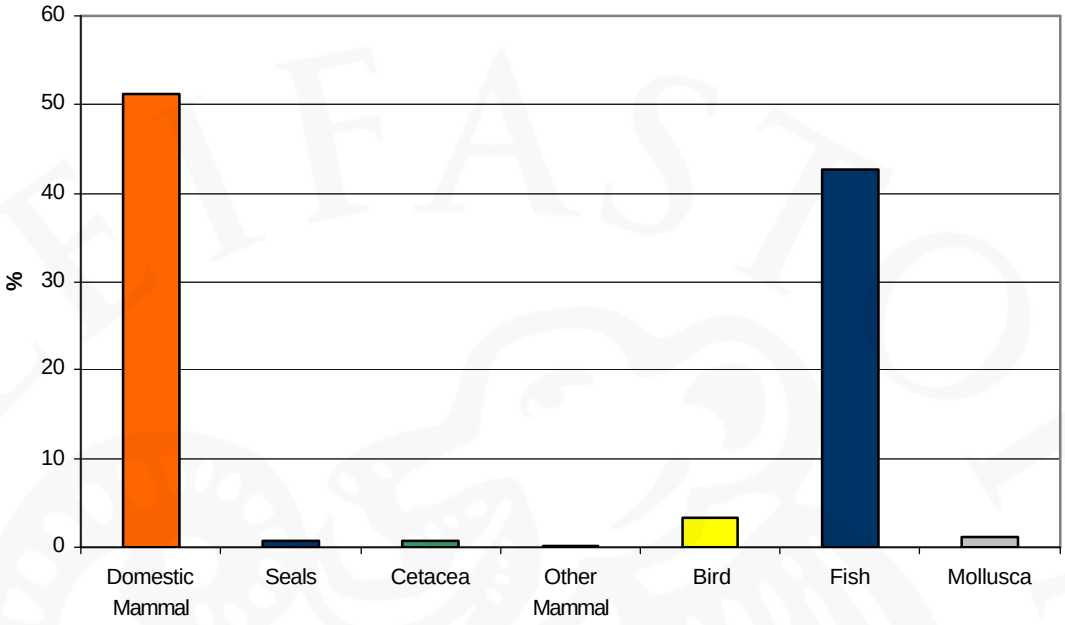
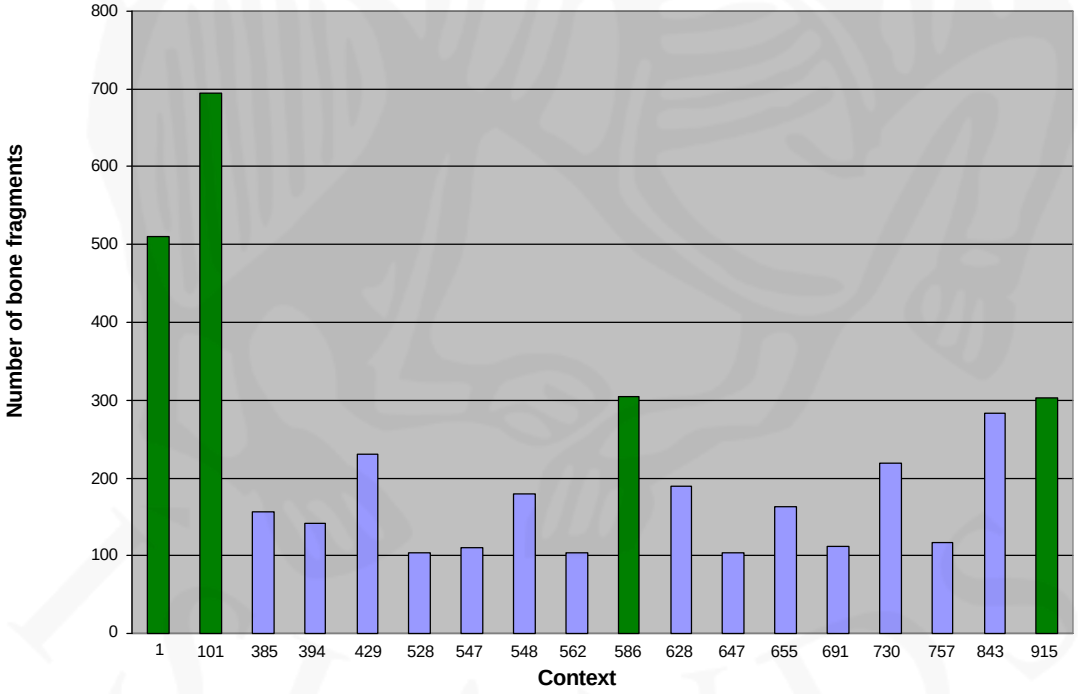


Fig 3. Contexts containing > 100 bone fragments
Green column: > 300 bone fragments



As the graph in Fig 3 indicates, the context producing the largest amount of bone fragments (in 2003) was 101. While in 2002 only one context (1) yielded a number of bone fragments above the minimum 300 mammal bone NISP (number of identified fragments = bones identified to a useful taxonomic level) threshold for full quantification recommended by the NABO Zooarchaeology Working Group (see green columns indicating 300+), the 2003 collection yielded three more such contexts.

As can already be seen from the last two years of faunal analysis, a larger amount of excavated remains provides a better idea of the total amount of animal remains initially present on site.

Overview of Species Present

Table 1 presents the 2002/2003 Gásir archaeofauna, grouped into 2002 and 2003 fauna. NISP (number of identified specimens) refers to all fragments that could be identified to a useful level, TNF is a count of all bone fragments (identifiable or not), MTM is "medium terrestrial mammal" (sheep-dog-pig sized), LTM is "large terrestrial mammal" (cattle-horse sized), UNIM or unidentified mammal are small fragments that cannot be identified beyond this broad category. As opposed to the 2002 yield, dog bones are present in the collection, coinciding with characteristic canine tooth marks that are present on a number of bone fragments in the collection.

Table 1 Gásir 2002/2003 Aggregated Fragment Count

Taxon	*2002*	*2003*	*total*
Domestic Mammals			
Cattle (*Bos taurus dom* L)	255	296	551
Horse (*Equus cab. dom* L.)	5	5	10
Pig (*Sus scrofa dom* L.)	2	12	14
Dog (*Canis fam.* L)	present	3	3
Goat (*Capra hircus dom* L)	2	9	11
Sheep (*Ovis aries dom* L)	45	166	211
Caprine	296	487	783
total Caprine	343	662	1005
total Domestic	605	978	1583
Wild Mammals			
Harp Seal (Pagophilus groenl.)	0	4	4
Small seal	4	6	10
Seal species	5	2	7
total Seal	9	12	21
Small Cetacean	1	7	8
Large Cetacean	1	1	2
Whale species	0	8	8
total Whale	2	16	18

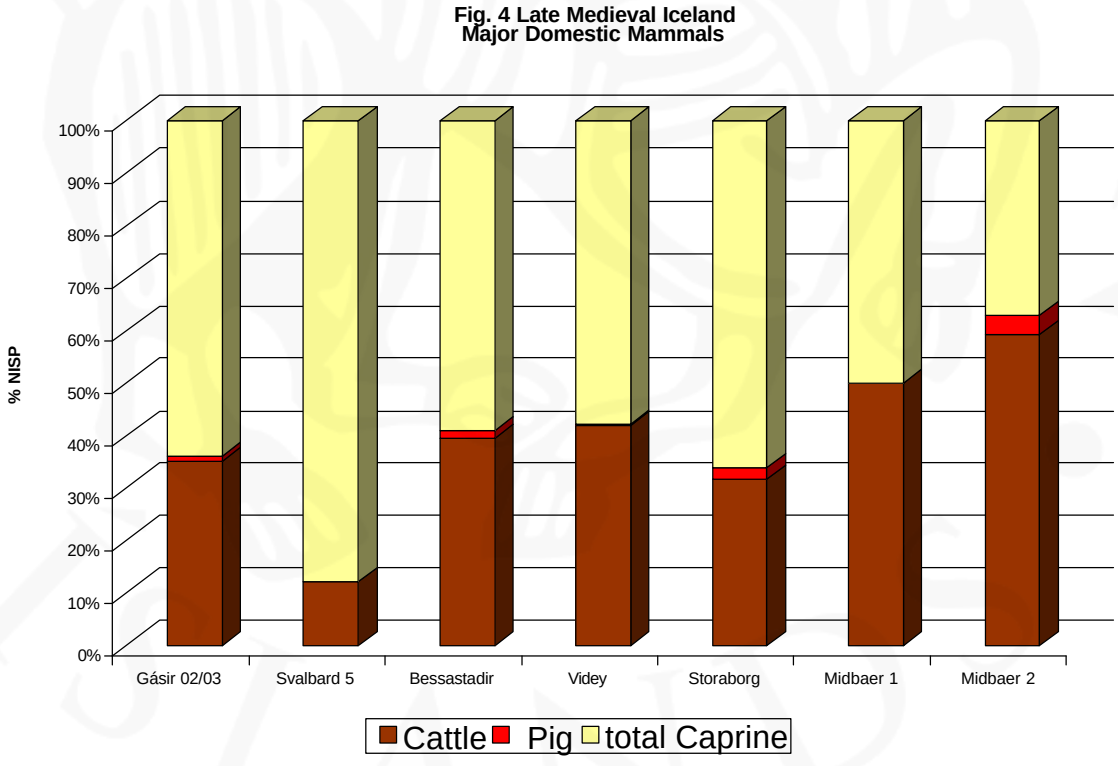
Arctic fox (Alopex lagopus)	0	4	4
Walrus (Odobenus rosmarus)	0	1	1
Birds			
Gyrfalcon (Falco rusticolus)	0	1	1
Mallard (Anas platyr.)	0	1	1
Eider duck (Somateria moll.)	0	26	26
Guillemot (Uria lomvia)	0	8	8
Puffin (Fratercula arctica)	0	2	2
Fulmar (F. glacialis)	0	1	1
Gull species (Laurus sp.)	0	1	1
Razorbill (Alca torda)	0	2	2
Bird species indeterminate	23	43	64
total Bird species	23	83	106
Fish			
Cod (Gadus morhua)	0	1	1
Haddock (Melanogr. aeglef.)	0	11	11
Atlantic Halibut (Hippoglossus. hipp)	0	2	2
Gadid sp	0	12	12
Fish species indeterminate	190	1,102	1,292
total Fish species	190	1,128	1,318
Mollusca			
Periwinkle (Litt. l.)	0	0	1
Clam (Mya sp.)	0	36	36
total Moll. Species	0	36	37
total NISP	848	2,240	3,088
Large Terrestr. Mammal	188	354	542
Medium Terrestr. Mammal	485	600	1,085
Small Terrestr. Mammal	0	8	8
Unidentified Mammal Frag.	580	1,846	2,426
total TNF	2,101	5,067	7,168

Table 2 presents the relative % of the domestic mammals for both 2002 and *2003* contexts. While in 2002 the abundance in cattle was almost as high as in caprines, 2003 shows a decrease in percentage of cattle bone vs. caprine bone. The total ratio deriving from two years of excavation: caprine/cattle = 1.82. Sheep/goat = 19.18.

Table 2 Gásir 2002 / 2003 Relative %
Domestic Mammals

Taxon	2002	2003	2002/2003
Cattle	40.87	30.27	34.81
Horse	3.85	1.23	0.63
Dog	0	0.51	0.19
Pig	0.32	0.31	0.88
Sheep	7.21	16.97	13.33
Goat	0.32	0.92	0.69
Caprines	47.44	49.8	49.46

A clear trend in all contexts is an abundance of cattle bone (almost all contexts have at least a few fragments) with a ratio of 1.8 caprine bones per 1 cattle bone. This high ratio of cattle to caprines can be compared to other late medieval (14th-early 16th c) Icelandic archaeofauna (figure 4).

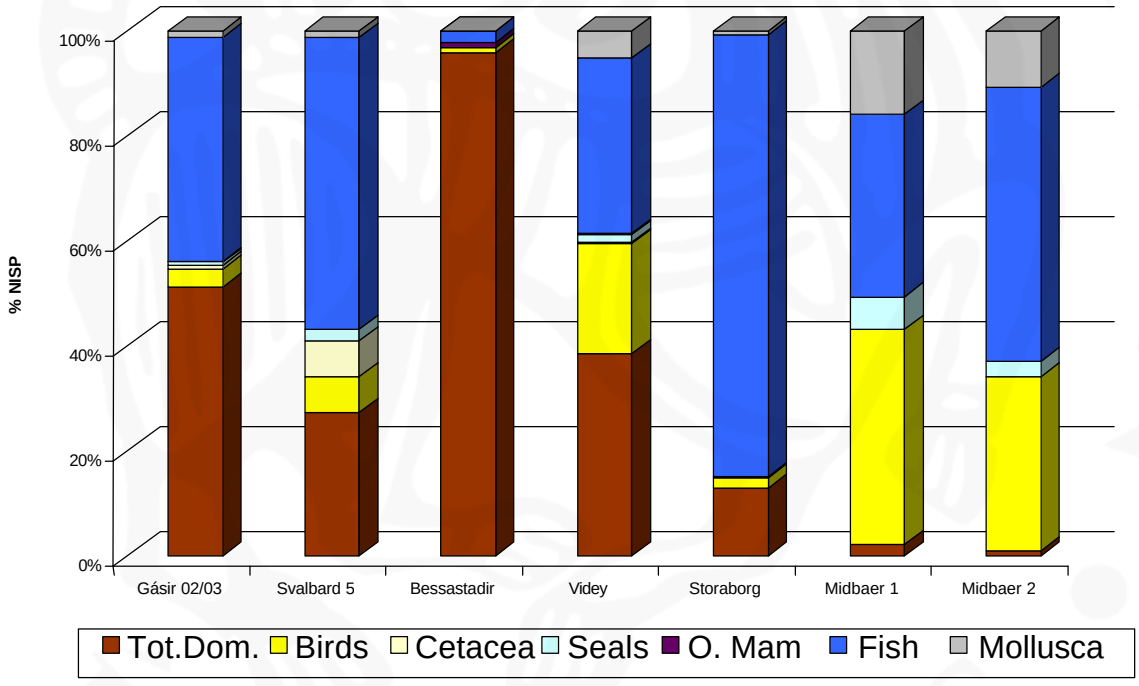


In figure 4 Gásir is compared to roughly contemporary collections from Svalbarð in the NE (SVB 5, medium-high status farm with church), the elite manor at Bessastaðir (BES L) near Reykjavík, the monastery on Viðey in Reykjavík (VID LM), a middle

ranking S coastal farm Storaborg (STB E) and two phases of a midden deposit associated with a small farm Miðbaer on the island of Flatey in Breidafjorð in the NW (Amundsen in press). The high cattle percentages for this small farm on Flatey are somewhat deceptive, as they reflect the extremely limited pasturage available on the island and a clear decision to use most available pasture for cattle raising (thus the graph actually reflects fewer sheep rather than more cattle). In general, higher percentages of cattle on most late medieval sites reflect availability of high quality pasture, high social status, or both. The closest matches with the 2002/03 Gásir domestic mammal pattern are in fact with the very high status manor of Bessastaðir in the SW, and the middle ranking S coastal farm Storaborg (STB E).

Figure 5 makes use of the same comparative archaeofauna to present the larger picture of the whole collection, regionally comparing wild species and domesticates. From the complete NISP collection, it seems that the monastery on Víðey in Reykjavík (VID LM) offers the most resemblance in total distribution of faunal remains recovered.

Fig. 5 Later Medieval Iceland
Major Taxa

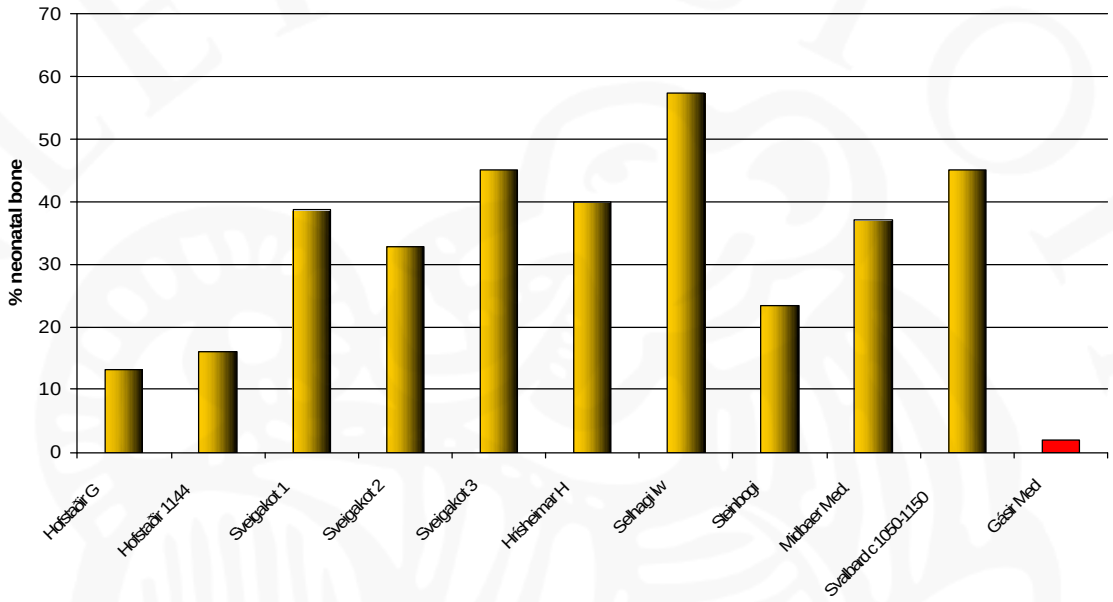


Reconstructing Domesticate Mortality Patterns

Cattle:

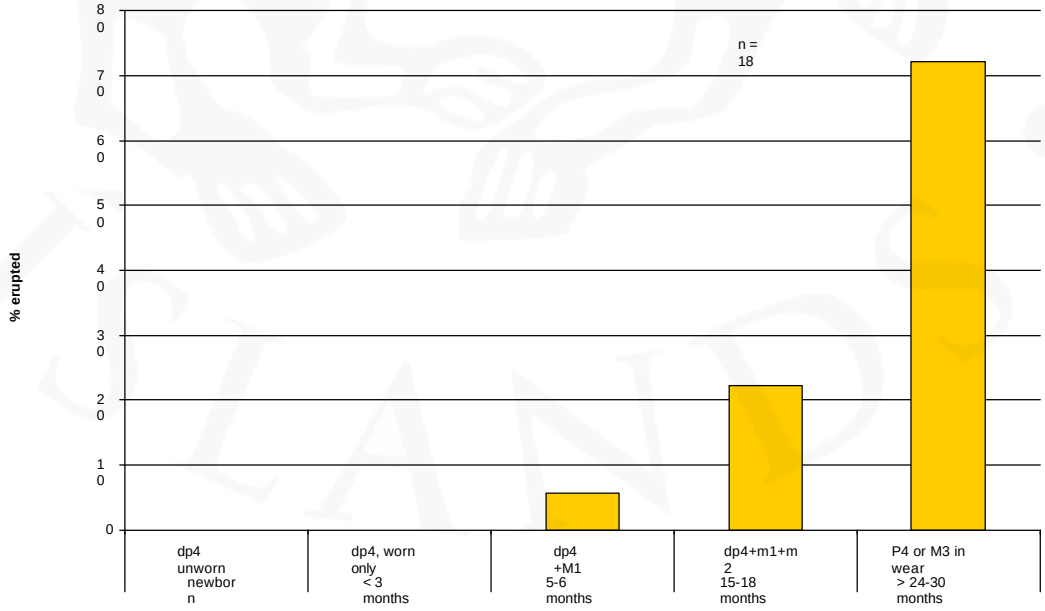
Figure 6 illustrates the relative percentage of neonatal (newborn) calf bones in a range of Viking-Medieval Icelandic sites, illustrating the normal range of variation from ca 15-50% of the total cattle bone count. This is generally interpreted as evidence of dairy herd management, with most milk being reserved for humans

Figure 6 Comparative Cattle Neonatal %



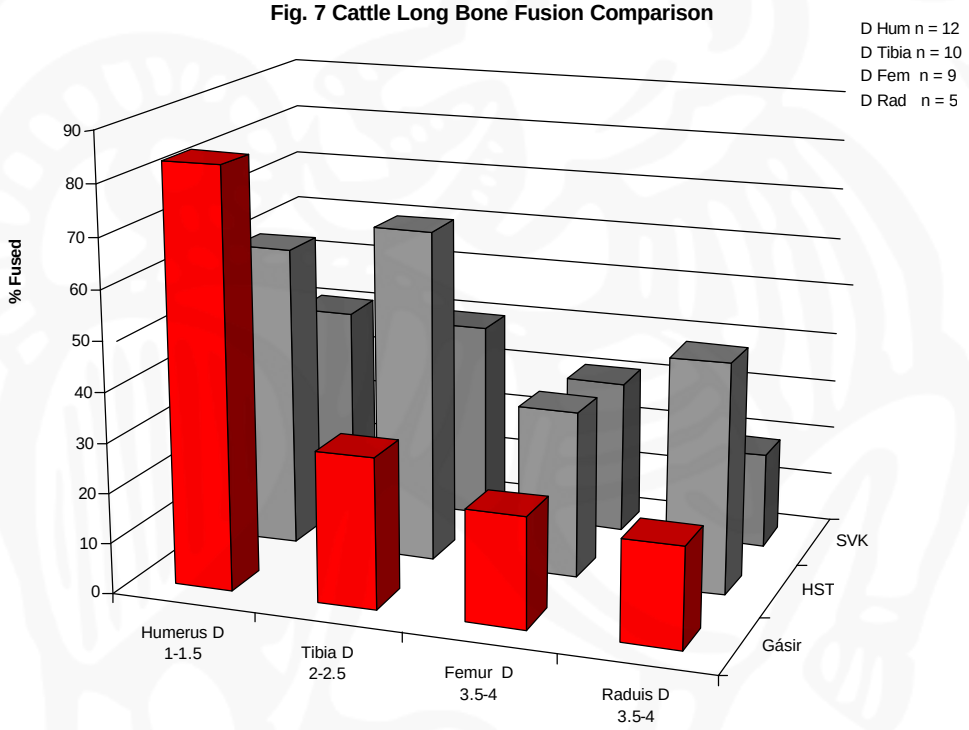
(Halstead 1998). The very low percentage of neonatal cattle bones at Gásir is thus very uncharacteristic of most Icelandic cattle collections, suggesting a different pattern of management or of consumption.

Fig. 6 Gásir Cattle Tooth Eruption



The Gásir 2003 excavation produced 18 cattle tooth rows that offer some insight into the site's food provisioning strategy. As can be seen in figure 6, in the majority of the excavated cattle tooth remains, the animal's death occurred either in the second year of life or as an adult. The shortage of jaws of usually common newborn or less than 3 month old calves is notable, and supports the impression provided by the overall low percentage of neonatal or very young juvenile cattle bones. If these old juvenile or young adult cattle are males, they have been raised at considerable expense in fodder (esp winter feeding). If they are females, they also have lived long enough to consume much fodder, but are only beginning their potential service as dairy cattle. In either case, in the context of a dairy herd these are very expensive animals to raise and slaughter at this stage in their lives.

Fig. 7 Cattle Long Bone Fusion Comparison



The cattle long bone fusion proportions (figure 7) indicates that at late medieval Gásir, most of the young cattle survived the stage of distal epiphysis fusion of the humerus, which occurs at around 1-1.5 years of age. There would appear to be considerable cattle mortality between ca 1-1.5 years and 2.5-3 yrs at Gásir, again suggesting kill off of large but not fully mature juvenile cattle as well as the presence of adults (note the different fall off of survivorship at Hofstaðir and Sveigakot).

These mortality patterns indicate not only that Gásir was not itself a dairy farm, but that it was not being provisioned with the most readily available surplus age classes generated by a normal Icelandic dairying economy: very young calves and elderly worn out milk cows. The 2002-03 cattle bone collection indicates that the site was instead provisioned with high quality young adult cattle meat by nearby farms. Since the farms were not sending their cast-offs to Gásir, but instead made major adjustments to their cattle herding strategy necessary to raise surplus animals to adult

or near adult meat weight, it seems likely that the market at Gásir had a significant impact on agricultural practice in the surrounding district. The nature of this impact and the linkage of Gásir with its sustaining rural hinterland are potential research questions for wider investigation.

The Caprines:

Fig. 8 Gásir Sheep Tooth Eruption

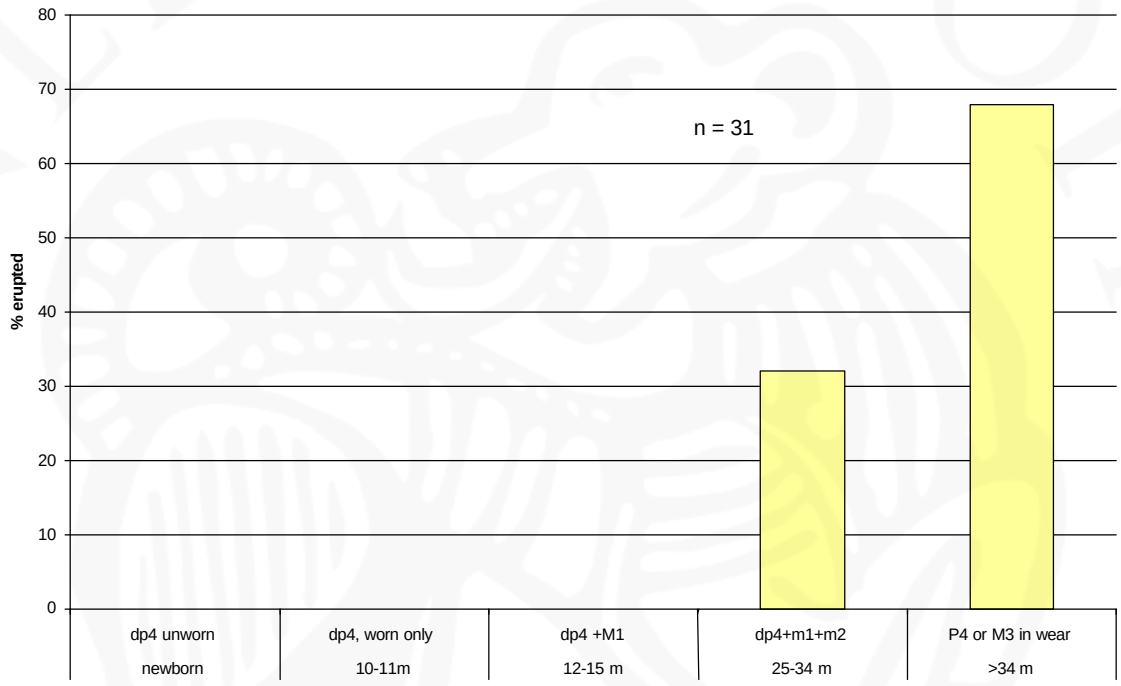
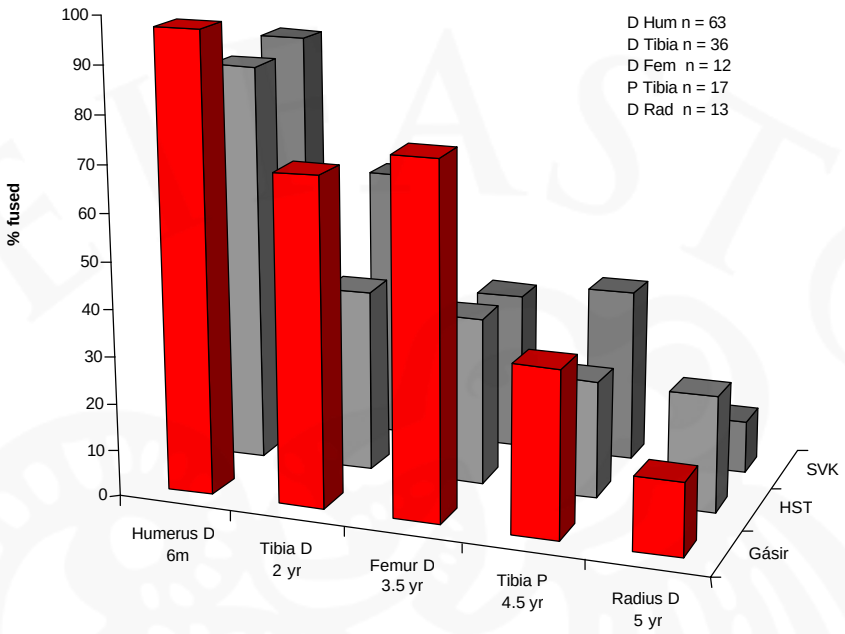


Figure 8 shows the pattern of tooth eruption in the sheep tooth rows (mandible and maxilla) from the 2003 excavation. Almost 70 % of the sheep were killed at an age of > 34 m, with full adult dentition in wear. Wear rates on sheep third molars suggest that few of these adult sheep were in fact old adults (further analysis is underway). The current tooth eruption and wear data for the Gásir caprines suggests provisioning with animals ranging from older adolescents to younger adults. Mandibular wear patterns thus far indicate the presence of substantial numbers of young to middle aged adults, without the higher proportion of highly worn teeth characteristic of old ewes or wethers (probably maintained primarily for wool production) characteristic of most larger Icelandic sheep mandible collections. Further analysis of caprine tooth eruption and wear will be carried out as sample size increases.

Fig. 9 Caprine Long Bone Fusion Comparison



The caprine (Sheep/Goats) long bone fusion comparison (figure 9) shows that the majority of caprines at Gásir were killed between 3.5 and 4.5 years of age. In comparison, caprines at HST (Hofstaðir) and SVK (Sveigakot) saw a slightly different mortality pattern, with higher culling in the first year and a generally higher proportion of older adults. Again, tooth eruption and wear and long bone fusion patterns suggest that most animals died as older juveniles or younger adults. Gásir was not being provisioned with worn out milking ewes or tough old wethers, but with sheep in their prime. Again, the implications for animal production strategies in nearby farms suggest some sort of specialized production.

Pigs

A considerable number of pig remains are present in the 2002/03 faunal collection. This is very atypical of late medieval Icelandic sites. By the 14th Century, the pigs had either disappeared from the Icelandic landscape or become very rare. Some of the bone fragments present could have formed portions of smoked or salted pork shoulder or hams, but some cranial fragments suggest that live pigs (native or imported) were present at Gásir.

Walrus

Fig. 10 Walrus tusk fragment

The walrus canine (tusk) fragment found in context 101 was most likely brought onto the site as an extracted but unworked tusk, as there is no evidence of butchered walrus post cranial remains or of the characteristic maxillary fragments remaining from tusk extraction so prevalent in Greenlandic collections (McGovern 1985). After the tusk was expertly extracted from the animal's jaw at some distant kill site (Greenland, arctic Norway, or just possibly on the drift ice north of Iceland) the tusk was brought to Gásir and the hollow end of the tusk root was cut off with a saw (probably a typical medieval shallow bladed backed bone working saw, as the cuts come from at least two sides rather than straight across). The solid tusk ivory was then either transferred elsewhere whole or further cut up for on site craft working. The tusk came from a medium sized adult walrus.

Whales

Whale bone fragments at Gásir fall into two somewhat overlapping categories- those showing signs of working as raw material for artifacts, and those suggesting provisioning with whale meat. Most fragments are the sort of small chips and cut offs indicative of craft work, but several rib fragments from small whales (pilot whale, narwhal, beluga) or porpoise are also interpretable as food debris (contexts 101, 223, 528, 547, 577). Three of these rib bones come from immature individuals (two from context 101, one from context 571). Late medieval cook books include many receipts for young porpoise to be served as high-status dishes, but porpoise and small whales have been consumed in most parts of the N Atlantic since prehistory.

Seals

Seal bones found at Gásir (contexts 101, 562, 674, 238, 282, 528, 617, 684, 730, 756) include both adults and newborn young (context 282). All four bones that could be identified to species level (contexts 617, 684, 730, 756) came not from the local harbor seals (*P vitulina*) still plentiful in Eyjafjord but from the ice-riding harp seal (*Pag. groenl.*). Harp seals are common in Icelandic waters only during periods of heavy drift ice, and have been associated with "little ice age" conditions in the NE

(Amorosi 1992, Woollett 2004, Oglivie 1991). While widely consumed in most coastal communities in the N Atlantic, by late medieval times seal meat was usually distained in court cook books as "fit only for sailors". It is possible that the distribution of seal bones at Gásir may provide some hints at class and ethnicity.

Birds[1]

Table 3 presents the 2003 birds identified to species, grouped by family. The majority of bones come from eider ducks, common along the shore of Eyjafjord today. Guillemot and Puffin were regularly eaten in Iceland and much of Atlantic Europe. More surprising is the bone of a single Fulmar, a species usually thought to have arrived in Iceland in early modern times. This bone comes from context 101 (site clearing) and may represent a later (possibly non-anthropogenic) deposit.

Table 3: Identified Bird Species	Absolute #	%
Raptor	1	2.5
Gyrfalcon (Falco rusticolus)		
Migratory Waterfowl	27	67.5
Mallard (Anas platyr.)		
Eider duck (Somateria moll.)		
Sea birds	12	12
Guillemot (Uria lomvia)		
Puffin (Fratercula arctica)		
Fulmar (F. glacialis)		
Gull species (Laurus sp.)		
Razorbill (Alca torda)		
Total	40	100

Most exceptional is the find of a single gyrfalcon leg bone in context 756 which serves to dramatically confirm documentary accounts of falcon export via Gásir (figure 11).

Fig 11. Falco rusticolus, tarso-metatarsal bone

[1] NB: Birds and fish from the 2002 excavation have not yet been identified to taxon. This work is underway and will appear in the next interim report. All the identified birds and fish taxa result from the 2003 collection analysis

FISH

Since fish fragments make up a high portion of the total NISP at Gásir 2002/03, their role in the food provisioning strategy should be discussed, although analysis continues on the 2002 fish remains. As mentioned earlier in this report, most fish elements are fragmented beyond speciation, perhaps by the application of stone cod hammers used to tenderize dried fish in medieval times. Figure 12 thus lumps all identified gadid (cod family) fish in presenting the distribution of fish bones across the skeleton. The Gásir gadids (red) are compared to distribution of gadids from two 18th fishing sites (Finnbogastaðir in the NW and Tjarnargata 3c in Reykjavik) and 10th -11th c inland consumer's sites in the Mývatn region (Sveigakot and Hrísheimar).

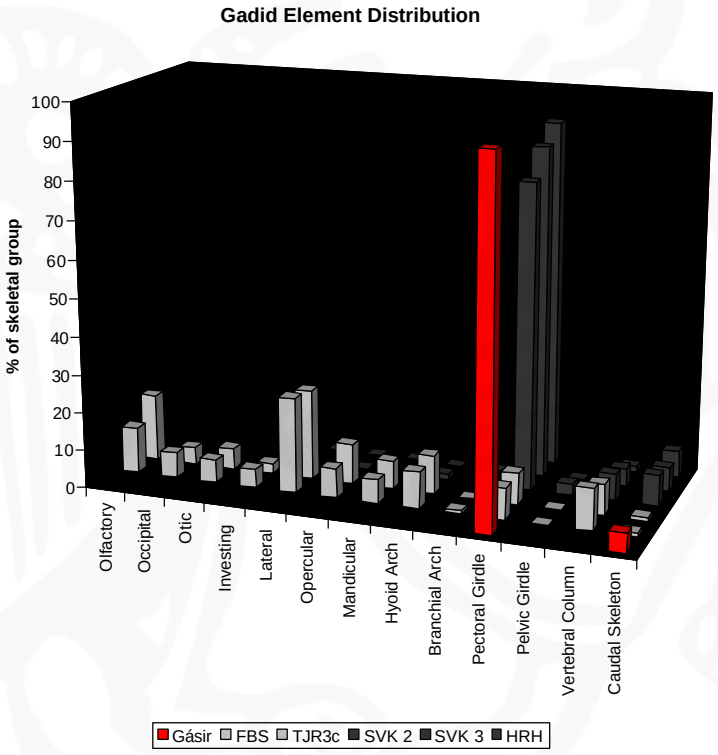


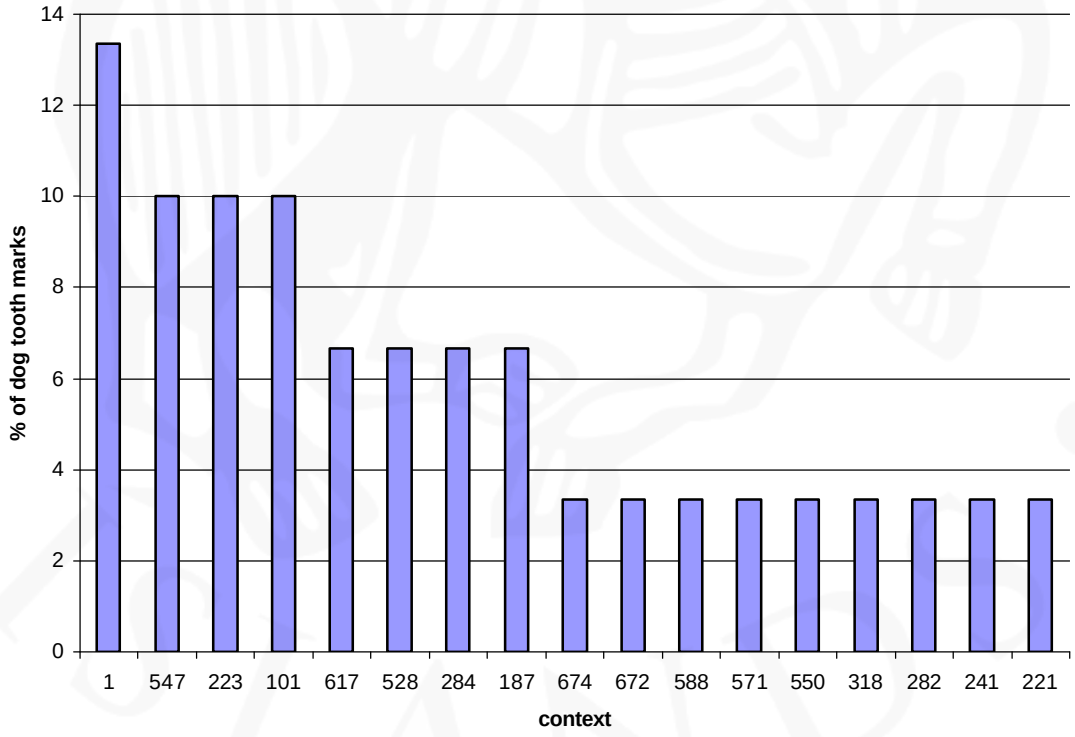
Fig. 12

The Gásir gadid distribution, with its large number of cleithra (in pectoral girdle, usually left in the body of preserved fish) and caudal (tail) vertebrae, strongly resembles the pattern of the early medieval inland sites and differs strongly from the pattern of the two fishing sites with their heavy representation of head parts. It would appear that Gásir was being provisioned with some form of headless preserved fish, and that little active fishing or fish processing was taking place from the site.

Craft working: The horse remains are mostly comprised of loose teeth and foot/lower leg fragments. It should be noted that context 220 and context 101 yielded 70% (7/10) of the horse bone assemblage present at the site. The nature of preserved horse bone fragments indicates craft working activities rather than horse meat consumption, since the elements found were mandibular, maxillary, or lower limbs. Whale bone: except for the porpoise-size whales, the majority of whale bones found at Gásir bear marks that derive from bone working. The one large whale element collected in 2003 represents a particularly good example. for craft working, since it has been drilled.

Gnawing: tooth marks of carnivores (almost certainly dogs in the Icelandic context), rodents, and occasionally humans are regularly found on bones in North Atlantic archaeofauna. Archaeofauna from Norse Greenland are by far the most gnawed, with up to 30 % of bones on some sites showing carnivore tooth marks (McGovern 1985). Icelandic bone collections are far less heavily marked by gnawing, though some bones from urbanizing Reykjavik show dog and rodent gnawing on the same bones (suggesting a multi-tiered scavenging hierarchy, Perdikaris et al 2001). The Gásir 2002/03 collection does show carnivore (presumably dog) gnawing, and the distribution by context is shown in figure 13.

Fig. 13 Gásir Dog tooth marking %



Note that while a low number out of the total bone assemblage are gnawed, there are some contexts have a high percentage of gnawing. Did dogs have access to some

areas but not others? Are some species' bones (and some skeletal elements) more likely than others to show gnaw marks?

Foodways and Ethnicity:

Beginning around AD 1150-1200, a technique for extracting the marrow from the metapodials (lower leg bones) of sheep and goats spread into several N Atlantic communities, including the Shetlands, Faroes and Iceland (but not Greenland). The biperforation technique involves opening two circular holes at each end of the long bone and sucking out the rich marrow (Bigelow 1984). This marrow extraction technique avoids bone splinters in the marrow produced by the earlier Viking age pattern of longitudinal splitting, and has the advantage of retaining a very usefully shaped bone nearly intact for tool use. By the later medieval period, nearly all sheep metapodials in all Icelandic archaeofauna were biperforated, and split metapodials are exceedingly rare (by early modern times a folk belief held that splitting metapodials at meals would cause live sheep to break legs in the same place). In England and Continental Europe, this technique remained unknown, and late medieval diners continued to split sheep and goat metapodials in the old fashion. Table 4 presents the proportions of split vs. biperforated caprine metapodials from the 2002/03 Gásir collection (including drilling to err on the safe side), documenting the overwhelming use of splitting rather than biperforation in marrow extraction. In an Icelandic farm site of the 14th-15th century one would expect to see these proportions reversed. Does this low frequency of biperforation reflect non-Icelandic ethnic origins of the residents of Gásir?

Table 4: Caprine Metapodials				
	Biperforated	Split	Other	total
count	9	48	2	59
%	15.25	81.36	3.39	

Conclusions and Further Work

The 2002/03 archaeofauna from Gásir serves to demonstrate its considerable potential for zooarchaeological research in Iceland, and suggests a number of areas where zooarchaeology may usefully contribute to a better understanding of this complex site. While the current sample is but a beginning, we are already able to lay out some areas for productive further collaboration and to propose some broader questions for general consideration.

As noted above, close integration of the animal bone data (element representation, species present, taphonomic signatures) with the excavation program can aid in the interpretation of specific features and in some cases may aid in establishing sequences of use and abandonment. Fortunately modern software makes such contextual integration straightforward, and this will certainly increase as the project moves ahead.

Beyond the basic archaeological issues associated with individual contexts and phases, zooarchaeology can contribute to some of the larger questions concerning the role of Gásir in Iceland's history.

- **Provisioning**: How was the settlement at Gásir provided with food? As the site was definitely not primarily a farm or fishing station, it needed to be supplied from outside sources. From historical data we can hypothesize many sources of supply, but the current bone sample suggests that dried fish, cattle and sheep meat played a major role in provisioning the settlement. While it is unclear at the moment if cuts of meat were imported to Gásir, it is now certain that at least some animals were brought to the site whole and probably slaughtered nearby. The current lack of calf and lamb bones suggests that the settlement did not in fact constitute a normal dairy-oriented, wool producing late medieval Icelandic farm.
- **Integration with Rural Economy**: What impact did the specialized settlement at Gásir have on the rural economy of the surrounding area? How did the presence of relatively wealthy consumers affect the economic decision making of local farmers of different wealth and rank? Thus far the archaeofauna does not suggest that the site was being entirely provisioned with cast off by-products of the normal farming economy (very young animals and very old ones) but with older juvenile and young adult cattle and sheep. Further investigation of age profiles of animals brought to Gásir will be important, and the sampling of a contemporary farm midden in the same district would provide important comparative information.
- **Ethnicity and Foodways**: In many respects the Gásir archaeofauna is very atypical for late medieval Iceland: cattle consumption comparable to rich manors in the SW but without the clear dairying profile characteristic of these elite farms. In the details of butchery and consumption of animals there are messages about foodways and ethnicity: does the butchery pattern of sheep at Gásir reflect the dining habits of native Icelandic or foreign consumers?
- **Seasonality**: If enough different seasonal indicators can be collected, it should be possible to contribute to discussions of seasonal vs. year round

occupation. While the current sample is small, we may wonder if the shortage of new born calves and lambs (almost exclusively born in May) reflects an arrival of most of the occupants later in the summer?

? **Status**: Hopefully, future excavation work will produce more indicators of status and hierarchy systems present at the site. The gyrfalcon and seals provide an initial idea of the socially diversified group of people present at late medieval Gásir.

Literature

Arge, S. V. 1995. Mergsogin bein - ein aldargamal mats?ur. *Fró?skaparrit* 43: 59-65.

Amundsen, Colin 2004, An Archaeofauna from Miðbaer on Flatey in Breiðafjorð in NW Iceland, *Environmental Archaeology 9*, in press.

Bigelow G.F. 1985 Sandwick Unst and the Late Norse Shetlandic Economy, in B. Smith (ed) *Shetland Archaeology, New Work in Shetland in the 1970's*, Shetland Times Press, Lerwick, pp 95-127.

Crabtree, P. J. 1990. Zooarchaeology and Complex Societies: some uses of faunal analysis for the study of trade, social status and ethnicity. *In Archaeological Method and Theory, Vol 2*, University of Arizona Press, Tuscon

Driesch, A von den. 1976. *A Guide to the Measurement of Animal Bones from Archaeological Sites.* Peabody Museum Bulletin 1, Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge, Massachusetts

Enghoff, I. B. 2003. Hunting, fishing, and animal husbandry at the Farm Beneath the Sand, Western Greenland: an archaeozoological analysis of a Norse farm in the Western Settlement, *Meddelelser om Grønland Man & Society* 28. Copenhagen

Grant, Annie 1982. The use of tooth wear as a guide to the age of domestic ungulates, in B. Wilson, C. Grigson, and S. Payne (eds.) *Ageing and Sexing Animal Bones from Archaeological Sites*, BAR British Series 109 pp 91-108. Oxford.

Grayson, D. K. 1984. *Quantitative Zooarchaeology.* Academic press, Orlando

Halstead, Paul, 1998. Mortality Models and Milking: problems of uniformitarianism, optimality, and equifinality reconsidered, *Anthropozoologica* 27: 3-20.

Hillson, Simon , *Teeth*, 1986 Cambridge Manuals in Archaeology, Cambridge U Press.

Lyman , R.L. 1996, *Taphonomy*, Cambridge U.P.

McGovern, T.H. 1985. The arctic frontier of Norse Greenland, in: S. Green & S. Perlman (eds.) *The Archaeology of Frontiers and Boundaries*, Academic Press, New York, pp. 275-323.

McGovern T.H., Amorosi T., Perdikaris S. & Woollett J.W. 1996 Zooarchaeology of Sandnes V51: Economic Change at a Chieftain's Farm in West Greenland, *Arctic Anthropology* 33(2)94-122.

McGovern T.H., Sophia Perdikaris, Clayton Tinsley, 2001 Economy of Landnam: the Evidence of Zooarchaeology, in Andrew Wawn & Thorunn Sigurðardottir (eds.) A*pproaches to Vinland* , Nordahl Inst. Studies 4, Reykjavik. Pp 154-166.

McGovern, T.H. & Sophia Perdikaris (2002) Preliminary *Report of Animal Bones from Hrísheimar N Iceland*, report on file Fornleifastofnun lslands and National Museum of Iceland.

McGovern, T.H. 1999
Preliminary Report of Animal Bones from Hofstadir , *and* Area G excavations 1996- 97, *Archaeologica Islandica* 1.

North Atlantic Biocultural Organization Zooarchaeology Working Group 2003. *NABONE Zooarchaeological Recording Package 8th edition*, CUNY, NY.

Ogilvie, A.1991, Climate Changes in Iceland AD 865 to 1598. In Bigelow, G. (ed.) *The Norse of the North Atlantic, Acta Archaeologica,* Vol. 61.

Perdikaris, S. , Colin Amundsen, T. H. McGovern 2002 *Report of Animal Bones from Tjarnargata 3C, Reykjavík, Iceland,* Report on file Archaeological Inst. Iceland, Reykjavik.

Perdikaris S & T.H.McGovern in press 2003, Walrus, cod fish and chieftains: patterns of intensification in the Western North Atlantic. In T. Thurston (ed*) New Perspectives on Intensification*, Plenum Press.

Roberts H.M. 2002a *Fornleifarannsókn á Gásum 2001, Framvinduskýrsla* Fornleifastofnun lslands FS 163-01071, Reykjavík.

Roberts H. M. 2002b *Archaeological Investigations at Gásir 2002, a preliminary report.* Fornleifastofnun lslands FS180-01072, Reykjavík.

Roberts H.M. 2003 *Gásir 2002, an Interim Report,* Fornleifastofnun lslands FS194-01073

Vesteinsson, Orri, 2001, *Archaeological investigations at Sveigakot 1998-2000*, Reykjavik, FSl.

Vesteinsson, O., T. H. McGovern, and C. Keller, 2003, Enduring Impacts: Social and Environmental Aspects of Viking Age Settlement in Iceland andGreenland. *Archaeologica Islandica.* 2 Reykjavik.

http://users.cybercity.dk/~ccc12787/hist/dk1.html: *The History of Falconry in Denmark, Norway and Iceland.* Adaptation of a text by C. F. Tillisch by Jakob E. Borch.

http://www.danielbergmann.com/html/articles/gyrfalcon.html, *On the Gyrfalcon's Trail.*

Appendix 5

"Glass" from Gásir 03

H.M.Roberts

A total of 8 of objects identified as glass (or glass-like) were recovered from excavations at Gásir in 2003. Given the exceptional rareness of glass in a medieval icelandic context, some further explanation is required.

Of the 8 pieces, only 3 can be clearly identified as vessel fragments, and of those, 2 (Find 03-056) are clearly modern in date and originate from the topsoil. Only Find 03-053 (context 486) is of special interest. The latter is a small base fragment of a bottle or similar vessel. The glass is translucent, and a pale smokey greyish purple in colour. The form and fabric are consistent with a medieval date (Dr. Gavin Lucas pers comm). Finds 03-287 and 03-288 are indeterminate – being very small water worn fragments, but exhibiting the same apparent colour as Find 03-053. It is concievable that these are fragments of the same vessel, latterly abraded.

Finds 03-054 and 03-055 are also indeterminate – again being very small and waterworn. The latter are black in colour with an irregular matt surface. They may be of natural origin, possibly worn pieces of obsidian. Further analysis will be required.

Find 03-289 is an irregular rod of black glasslike material, measuring 34mm in length with a diameter of circa 3mm. It is possible that this object is a glasslike industrial residue, rather than a deliberately formed glass object.

FindsNo	ContextNo	Object_Keyword	Material	Count	Notes
03-053	468	Vessel	Glass	1	Base, greyish purple
03-054	794	Object	Glass?	1	Water worn – mineral?
03-055	634	Object	Glass?	1	Water worn – mineral?
03-056	101	Vessel	Glass	2	Modern. From topsoil
03-287	683	Object	Glass	1	Very small, water rounded
03-288	756	Object	Glass	1	Very small, water rounded
03-289	674	Rod	Glass?	1	Industrial residue?

Appendix 6

Fornleifarannsókn að Gásum í Eyjafirði - 2003
Gjóskulagagreining

Magnús Á. Sigurgeirsson, jarðfræðingur (netfang; masig@mmedia.is)

Þann 20. ágúst 2003 voru gjóskulög skoðuð í tengslum við fornleifarannsóknir á Gásum í Eyjafirði. Að þessu sinni var athyglinni beint að þremur rústum í jaðri eða skammt utan við megin búðaþyrpinguna á Gáseyri. Rústirnar bera vinnuheitin C-1, C-2 og C-3. Sömuleiðis var gjóska í uppgreftrinum nyrst á Gáseyri skoðuð.

Við greiningu gjóskulaganna er stuðst við fyrri gjóskulagarannsóknir á N- og NA-landi (Sigurður Þórarinsson 1968, Guðrún Larsen 1984, Magnús Á. Sigurgeirsson 1993; 2001). Þau gjóskulög sem best nýtast við fornleifarannsóknir í Eyjafirði eru Landnámssyrpa (LNS), sem er þunnt jarðvegslag með 3-5 gjóskulög frá 7.-9. öld, Landnámslag frá því um 870, eitt af lögum LNS, H-1104, H-1300, V-1477 (“a”-lagið) og V-1717.

Tóft C-1 (N búðaþyrpingar á Gáseyri)
Í torfi tóftarinnar er H-1300, LNS og slitrur af Heklu-3 (sem er um 2900 ára gamalt). Þunnur jarðvegur er á milli LNS og H-1300 í torfinu, um 2-4 cm, sem bendir til að jarðvegsþykknun hafi verið lítil þar sem torfið var skorið. Telja má víst að það hafi verið í næsta nágrenni tóftarinnar. Yfir torflögunum er um 15 cm þykkt rótarlag þar sem engin gjóska er sjáanleg. Í LNS er aðeins eitt dökkgrátt gjóskulag sjáanlegt með góðu móti, en ofan á því er rauðbrún fínkorna mold sem er einkennandi fyrir LNS. Mannvirkið er frá því eftir 1300, nær verður ekki farið um aldur þess á frekari athugana.

Tóft C-2 (SV búðaþyrpingar á Gáseyri)
Skoðað er langsnið í rofbakka í tóft C-2. Sniðið liggur meðfram brekkubrún og hefur hluti tóftarinnar greinilega hrunið niður brekkuna. Varðveisla gjóskulaga er fremur slæm. Gjóskulagið Hekla-3 er greinilegt undir veggjum tóftarinnar. Einnig er um 60 cm langur heillegur kafli af H-1300 undir syðri veggnum. Í torfinu má sjá LNS ásamt H-1300 og Heklu-3. Engin gjóska er sjáanleg yfir veggjum. Vera H-1300 undir vegg bendir til að mannvirkið sé byggt nokkru eftir árið 1300.

Tóft C-3 (V búðaþyrpingar á Gáseyri)
Mælt er snið í Norðurprófíl skurðs á milli 2,9-3,4 m á málbandi (sjá mynd 1). Gjóska er all áberandi í torfi tóftarinnar, sem er þarna allt að 1 m að þykkt. Í efstu 40 cm torfsins eru H-1300 og LNS mest áberandi. Þar undir er um 30 cm þykkt torf með einu dökku sendnu gjóskulagi (sýni tekin) og í elsta torflaginu, sem er um 30 cm þykkt, er gjóskulagið H-1300 ráðandi. Smásjárskoðun bendir til að sendna gjóskulagið í miðhluta torfsins geti verið gjóskulagið V-1717. Skörp skil eru á milli torfgerða á um 85 cm dýpi, sem bent gæti til tveggja misaldra byggingaskeiða á þessu mannvirki. Gróflega áætlað mætti giska á að elsta torfið sé frá 14.-15. öld en það yngra frá 18.-19. öld.

Heimildir

Guðrún Larsen 1984: Recent volcanic history of the Veidivötn fissure swarm, Southern Iceland – an approach to volcanic risk assessment. J Volcanol. Geotherm. Res. 22, s. 33-58.

Magnús Á. Sigurgeirsson 1993: Gjóskulög í innanverðum Eyjafjarðardal. Jarðfræðafélag Íslands, Vorráðstefna, dagskrá og ágrip, bls. 41-42.

Magnús Á. Sigurgeirsson 2001: Fornleifarannsókn á Gásum í Eyjafirði. Gjóskulagagreining. Greinargerð 01/03, 3 bls.

Sigurður Þórarinsson 1968: Heklueldar. Sögufélag, Reykjavík, 185 bls.