

HOLM OF PAPA WESTRAY SOUTH, PAPA WESTRAY, ORKNEY

DECORATED INTERIOR STONEWORK SURVEY 2018



ANTONIA THOMAS 2019

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Summary

This report provides an interpretive account of the interior stonework and decoration within the Holm of Papa Westray South chambered cairn, Papa Westray, Orkney, based on survey work undertaken by the author in June 2018 and funded by Historic Environment Scotland through the PIC Archaeology Grants Programme.

Thirty-four areas of possible marking or decoration have now been identified in the tomb and are discussed in this report. All of the recorded marks appear to have been executed by pecking or grinding, with the exception of one lightly incised example which was recorded in the 1990s. Interpretation of these is cautious, however, because of the level of algal growth and surface degradation on much of the stonework, and the high concentration of stones with geological features forming 'cups' and meandering lines. Nevertheless, the unusually high number of these naturally marked stones suggests that many of these were deliberately chosen for inclusion in the cairn, and many of these have been considered worthy of discussion.

In addition, several examples of previously unrecorded motifs, which can be compared to Neolithic examples from other sites in Orkney, were also identified and recorded. Some of these appear to correspond with carvings which were illustrated in the 1850s but thought to be no longer extant, whilst some of these are being presented for the first time. A detailed cross-referencing of antiquarian records, and archival research, was also undertaken and is discussed in the following report.

Acknowledgements

Jocelyn and Neil Rendall, the owners of the Holm of Papa Westray, kindly allowed access to the Holm for the purposes of this survey. I would also like to thank Papay Development Trust, and in particular, Jonathan Ford, Jennifer Foley, and Julian Branscombe for support and assistance during the survey and my stay on Papa Westray in June 2018. The fieldwork itself was grant funded and facilitated by Historic Environment Scotland and the author would like to thank Georgina Ritchie, and Richard Strachan, of the Cultural Resources team, for their assistance and advice on this project. They also facilitated access to photogrammetric models of the site which had been commissioned by, and created for, Historic Environment Scotland by Hugo Anderson-Whymark. These were used for the production of the plan and elevations drawn in this work. Many of the carvings recorded in this survey were photographed by Hugo Anderson-Whymark during his 2016 photogrammetry survey and my report has benefitted greatly from his advice and comments.

For bibliographic purposes this report should be referred to in the following manner:

Thomas, A. 2019. *The Holm of Papa Westray South, Papa Westray, Orkney: Decorated Interior Stonework Survey 2018.* Unpublished report (grant supported by Historic Environment Scotland).

I.0 Introduction

This report presents an interpretive record of survey work undertaken within the Holm of Papa Westray South, a Neolithic chambered cairn on the Holm of Papa Westray, Orkney, focussing in particular on the carvings and other examples of internal surface decoration. Decorated stonework was first noted in the mid-19th century (Thomas 1852; Petrie 1853, 1857, 1863), but by the time the cairn was taken into Guardianship in 1929, its stonework and the visibility of its carvings had suffered significant deterioration (Davidson and Henshall 1989, 121). Surveys in the 1970s and 1990s led to the discovery of further possible examples of Neolithic decoration, but many of the marks recorded in the 19th century remained unidentified and were assumed to have been weathered or damaged beyond visibility. Several antiquarian drawings and accounts exist of the site, but until now, it has proved difficult to cross-reference these with the surface decoration on the stonework as it appears today.

The following report combines archival research and the results of survey work in 2018 to present the most comprehensive account of the tomb's carvings and stonework to date. This project has been grant funded by Historic Environment Scotland through their Archaeology Grants Programme and contributes to a wider programme of research and survey work being undertaken by the author at Neolithic Properties in Care in Orkney.

2.0 Site Description

The Holm of Papa Westray South, also known as *The Disses of the Holm*, is a chambered cairn (Site ID: HY55SW 1) on the Holm of Papa Westray, a small island to the east of Papa Westray, in Orkney's north isles (Fig.01). The cairn is situated at NGR: HY 5091 5183 on the highest point at the south of the Holm, at approximately 15mAOD (Fig.02). It is a Scheduled Ancient Monument (SM90163) and a Property in Care of Historic Environment Scotland.

The cairn is roughly rectangular with rounded corners, and comprises drystone walls covered with turf. It measures approximately 38x19.5m on a NNE-SSW axis (Davidson & Henshall 1989, 121; see Fig.06). The 9.1m long entrance passage on the SE side opens into the internal structure which is partitioned into three compartments: a 13.5m-long corridor-like central chamber, with a chamber appended at each of the southwest and northeast ends. These are divided from the main chamber by thick cross-walls which have low openings at ground level. There are twelve side cells, six of which lead off from the main chamber (including two cells which are 'doublecells'), and three leading off each of the chambers at the southwest and northeast ends. In contrast to the large overall size of the tomb, the side cells are extremely small, with narrow openings. Overall, the interior space of the main chambers and the end chambers, is 20.4m long, varying in width from 1.2-1.4m. The walls survive to a height of between 0.6-2.6m (Davidson & Henshall 1989, 122).

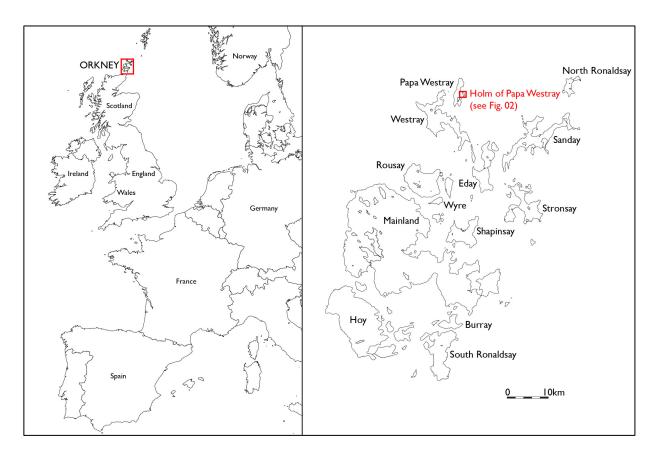


Fig. 01: Site location. Image © AT based on open source map data licensed under Creative Commons.

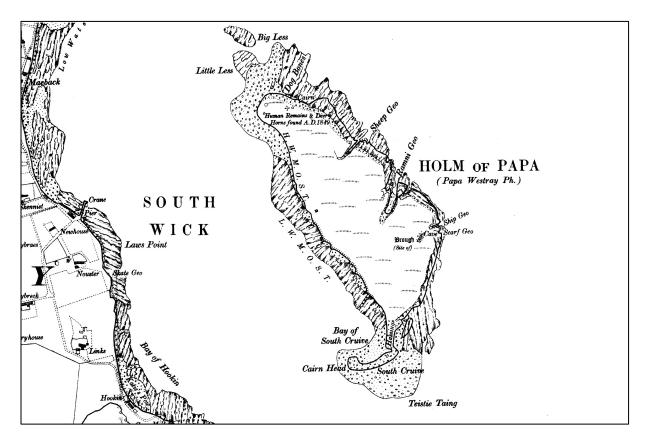


Fig. 02: Map of the Holm of Papa Westray. Ordnance Survey six-inch to a mile, Orkney Sheet LXXI. Published 1903, revised 1900. The tomb is marked "Brough (site of)". Second edition. Image out of copyright.

3.0 Archaeological Background

3.1 Early accounts and investigations

In 1849, F.W.L. Thomas, Captain of H.M. cutter *Woodlark*, who was surveying in Orkney for the Royal Navy, was invited by Thomas Traill of Holland, Papa Westray, to investigate a 'Pict's House' on the Holm of Papay (Thomas 1852, 127-130). The 'Pict's House' was a massive passage grave, which measured nearly 38 x 20m in length and comprised a long central chamber leading off to twelve cells (Davidson & Henshall 1989, 121).

Thomas cleared out most of the structure down to a clean clay floor covered with wind-blown sand. He only found a few rabbit and sheep bones, which he considered to have been quite recently deposited (Thomas 1852, 128), but Daniel Wilson recorded the remains of other domestic animals as well as deer antlers, mollusc remains and ashes, from the vicinity of the cairn (Wilson 1851, 83). Thomas noted two possible decorated stones: "on the side wall near the entrance, and about six feet from the floor, there is a neatly-engraved circle about four inches in diameter; there is also another stone with the appearance of having two small circles, touching each other, engraved upon it" (1852, 128). The first of these is probably no.12 in the current report; it is not clear what his second description relates to.

Further decorated stones were identified and illustrated by George Petrie when he visited with Robert Hebden, the owner of Eday, a few years later (Petrie 1857, 61). Petrie was "agreeably surprised not only to find the circles referred to by Lieutenant Thomas, but also to discover quite close to them as well as on various other stones in the walls, other engraved figures" (Petrie 1857, 61). Petrie published the drawings of four of these in 1857 (Plate III; see Fig.16), with his no.s 2-4 relating to stones No.14, 04 and 08-10 in the current report respectively. The location of his no.1 is not clear beyond being on "the east [i.e. SE] side of the main or centre apartment" (Petrie 1857, 61). Other decorated stones were illustrated by him in his field drawings of 1853 (see Fig.15), but not published, and not all of these have been able to be correlated with other accounts or located in the field; these are discussed in more detail in section 7.0 of this report.

When Thomas excavated the site, the passage was still roofed with large flagstones, but the roof of the main chamber had fallen in – although this had only apparently happened within living memory (Thomas 1852, 128, fn.). On either side of the passage entrance Thomas traced a wall line that may be a concentric 'skin' around the cairn but this is no longer visible (Davidson & Henshall 1989, 122). The internal stonework had survived to a reasonable height when Thomas encountered it, and he noted that "the side walls ... rise perpendicularly for five feet, when they gradually approximate ... until, at the height of nine feet from the floor, they are within two feet eight inches of each other" (1852, 128).

The structure appears to have deteriorated very rapidly after Thomas' investigations, and by the time Joseph Anderson visited the site in 1872, the tomb was 'much dilapidated, and the convergence in some places scarcely perceptible' (Anderson 1886, 283). This deterioration would continue well into the next century (see Fig. 03).

3.2 20th-century Guardianship, restoration, and survey work

By 1924, the tomb was in 'a deplorable state of collapse' (Marwick 1925, 31). The site was visited by John Maitland Corrie of the Royal Commission on Ancient and Historical Monuments of Scotland (henceforth RCAHMS) in 1928 and described in detail in his field notebooks (copies of which are held in the Orkney SMR). Corrie noted that, "the roof has been entirely removed and much of the wall on the west side has been pulled down so that the interior is partially filled up and littered with debris that obscures a great part of the detailed structure, only the lintel stones of some of the small cell openings being apparent" (Corrie 1928; entry for 11th July 1928). The level of rubble infill prior to restoration works can be seen in Fig. 04, which shows the southwestern end of the interior; this can be compared with the photograph of the same area of the tomb taken in 2018 (Fig. 05).



Fig. 03: The exterior of the tomb in 1929. Original image © Historic Environment Scotland (reference SC01219141) and reproduced with kind permission. The drystone rubble stack is a naval navigation marker cairn which was built in the 19th or early 20th century.

The cairn was taken into State Guardianship in 1930. RCAHMS undertook a detailed drawn survey of the remains, and took a number of photographs of the site, including those reproduced in Figs. 03 and 10. Further carvings were recorded at this time, including No.05, and additions to No.07 (RCAHMS 1946, 188, Fig.270). The site was restored by H.M. Office of Works in 1931, with much of the current appearance of the site, including the concrete roof, the result of this conservation work, and modern visitors currently access the interior of the tomb via a hatch and ladder in the concrete roof which leads down into the central chamber.

The roof is supported on concrete walls which are slightly set back from, and rising above the original walls, although the full details of the restoration were not recorded (Davidson & Henshall 1989, 121). Comparisons between the 1929 photographs, and the extant stonework now (e.g. see Figs. 04 and 05, and 09 and 10), also confirm the minimal nature of the restoration. The site was visited by RCAHMS again in 1935, after the works. The survey team noted that the internal structure was now "effectually preserved", but also that "the ventilation is not good and the walls are very wet" (RCAHMS 1946, 188). The lack of ventilation, and the wetness of the walls, continue to be problematic today.

The tomb was visited by Audrey Henshall for her inventory of chambered cairns in Scotland in 1957 (Henshall 1963, 202-203) and then again in 1983 (Davidson & Henshall 1989, 121). By the time of these visits, correlation with the earlier records was very difficult, and Henshall was only able to identify some of the carvings recorded by Petrie. Elizabeth Shee Twohig visited the site in the 1970s, and recorded five decorated stones (Shee Twohig 1981, 227; Fig. 258, including one which had not been noted previously - No.27 in the current report). Survey work in the 1990s by Richard Bradley identified an unknown incised motif (No.24 in the current report), raising the possibility that unrecorded carvings exist (Bradley et al 2000). The site came into State Guardianship in 1930, and was 'deemed to be scheduled', i.e. treated as legally scheduled, under the terms of the Ancient Monuments and Archaeological Areas Act (1979). It was formally scheduled in its own right in 1996 and is Scheduled Ancient Monument SM90163.

3.3 Recent work and current state

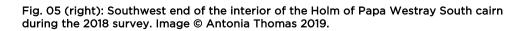
In May 2016, a casual visit to the site by the author highlighted the possibility that some of the pecked decoration, which had been thought to be no longer visible, was still extant (Thomas 2016, 5 & 41). Although many of these marks were known to local visitors (Jonathan Ford, pers. comm.), they had never been systematically recorded or cross-referenced with the early accounts.

The same year, a programme of detailed photogrammetry work on the structure of the tomb was commissioned by Historic Environment Scotland and undertaken by Hugo Anderson-Whymark. He noted further markings and decoration, including stone Nos. 01, 02, 03, 10, 18, 23 and 29 (Hugo Anderson-Whymark, pers. comm.).

Holm of Papa Westray South, Papa Westray, Orkney: Decorated Interior Stonework Survey 2018



Fig. 04 (above): Southwest end of the interior of the tomb in 1929. Original image © Historic Environment Scotland (reference SC01219124) and reproduced with kind permission.





Antonia Thomas 2019

Over the last 20 years, there has been growing awareness of the richness and significance of Orkney's Neolithic carvings (e.g. Bradley et al 2000; Shepherd 2000). Recent excavations of Neolithic buildings at the Ness of Brodgar, Stenness (Thomas 2016; Thomas 2019), and the Links of Noltland, Westray (Moore & Wilson 2011) have produced large numbers of decorated stones from either secure Neolithic contexts or *in situ* on structural stonework, allowing greater comparison and understanding of decoration from other sites.

The assemblage from the Holm of Papa Westray South tomb can be considered to be particularly significant, as the site is the only *funerary* site in Orkney to have both pecked and incised *in situ* decoration surviving. In this, it compares to the assemblage from the ongoing excavations at the Links of Noltland, Westray. Both sites have also produced stones with 'eyebrow' motifs (e.g. No.04 in the current survey), suggesting a significance to this motif and form of decoration that extends into both domestic and funerary spheres of architecture. Recent work at Maeshowe and Skara Brae (Thomas 2016, 2018) has demonstrated the potential for identifying unrecorded surface decoration through raking light survey, even in wellstudied sites, and the importance of accurate cross-referencing of old and antiquarian accounts with modern survey work.

In 2016, Papay Development Trust launched regular tourist boat trips to the Holm as part of the wider Coastal Communities Heritage Project. The site is now a popular tourist attraction, and there is considerable interest in viewing the *in situ* carvings in particular. These factors, and the tomb's growing appeal as a visitor attraction, meant that a systematic survey of its internal stonework, along with a synthesis of previous records, was both timely and essential.

4.0 Project Aims and Objectives

4.1 Project Aims

The general aims of the project were to provide a detailed survey of the internal stonework of the Holm of Papa Westray South cairn, Papa Westray, Orkney, focussing in particular on the carvings and other surface decoration. The project aimed to:

- produce digital elevation drawings from, and analyse and interpret, the photogrammetric models of the site produced by Hugo Anderson-Whymark in 2016;

- undertake a detailed, measured survey of the internal stonework in the tomb, including drawn, photographic and written records of all *in situ* carvings;

- undertake archival research to allow the identification and interpretation of areas of reconstruction, and surface decoration, and to allow crossreferencing of previous records.

4.2 Alignment to HES Corporate Plan 2016-2019 Objectives

1. To enhance visitor experience of the site and provide detailed, illustrated information on the tomb and its carvings for those who are unable to visit due to disabilities or poor weather, widening access to the site and encouraging greater engagement with Papa Westray's important Neolithic archaeology (*Encouraging Greater Engagement*).

2. To enhance understanding and awareness of the site's internationally important carvings, many of which have not yet been recorded (*Enhancing Understanding*).

3. To provide a detailed baseline record of the site for research for informed conservation management and monitoring, helping to protect it for future generations (*Protection and Management*).

4. To publicise the site and its unique archaeology to a wide academic and popular audience. This will raise the profile of the site and support the island's community-led heritage tourism industry (*Sharing and Celebrating*).

5. To provide opportunities for local tour guide(s) to increase their knowledge and skills and thus benefit employment opportunities for the local island community (*Improving Skills*).

6. To analyse the recently produced digital photogrammetric models and use these as a base for the survey. There is additional potential to link the survey data, photographic and drawn records with other interpretation material, e.g. as a layer on 3D models, to create a widely accessible and innovative digital resource (*Innovation*).

7. The project will create a comprehensive, digital, record for use by both researchers and members of the public, including as part of the HES-led Scotland's Rock Art Project (ScRAP) (*Improving the Knowledge Cycle*).

5.0 Survey Methodology

5.1 Preparation of base drawings for survey

High resolution scaled orthophotos of the plan and internal elevations of the tomb were generated, scaled and levelled by Hugo Anderson-Whymark from his 2016 photogrammetric survey. Although there is the potential for a small error across the tomb with this technique, this should be less than 1mm per metre (Hugo Anderson-Whymark, pers. comm.).

The orthophotos were digitised by the author in Adobe Illustrator[™] to produce elevation drawings for annotation during the fieldwork and were amended in the field where necessary. The position of decorated stones and other identified features were located on these drawings and these formed the basis of the illustrations shown in Figs. 06-09.

5.2 Fieldwork

Fieldwork was undertaken over two days on the 15th and 16th June 2018. Survey work comprised written descriptions of decorated stones and other features of interest, supplemented by a photographic record and interpretive sketches.

5.3 Written record

Individual numbers were assigned to discrete areas of decoration or interest. A basic description of these was recorded in the field and comprised dimensions, location in the cairn, technique of execution and an interpretive description of any visible motifs. Numbers were also assigned to discrete areas of decoration or features of interest which are no longer able to be clearly identified but which had previously been noted (Petrie 1853, 1857, 1863, 1866; Thomas 1852). As such, there may be some duplication between those numbers (030-034) and the numbers given to extant stones (001-029). Appendix 1 contains a register of all the recorded inscriptions.

5.4 Photographic record

The photographic record comprised digital colour photography using a Nikon D7100 DSLR. The record comprised detailed shots of the decorated stones and other features of interest discussed in this report. Images were taken in RAW format (NEFF files) and a selection of these were subsequently converted to TIFFs. An edited digital archive of these images has been lodged with Historic Environment Scotland; a register can be found in Appendix 3 of this report.

5.5 Archival research

Archival research included the consultation of photographs and manuscripts held by the National Record of the Historic Environment in Edinburgh, and in the author's personal collection. Several photographs of the cairn were taken by RCAHMS in 1929 prior to its consolidation and restoration. These are held in the search room at Historic Environment Scotland in Edinburgh (formerly the NMRS). These were analysed and compared with the tomb's current condition and appearance in order to determine the age of inscriptions and whether or not stonework might be in its original position. Where possible, the stonework which was replaced or reconstructed in the 1930s was identified and recorded on the elevations. Other records relating to the site and held by the Orkney Sites and Monuments Record (SMR), the National Record for the Historic Environment in Edinburgh, and in the Orkney Library and Archive, were also consulted.

5.6 Reporting and archiving

Reporting was undertaken in compliance with the guidelines for Data Structure Reports in Scotland as set out by Historic Scotland (1996). The digital photographic archive and a digital (PDF) report will be lodged with the National Record for the Historic Environment (formerly the NMRS) and hosted by HES in Edinburgh.

Copies will be distributed to the landowners, Neil and Jocelyn Rendall, Holland, Papa Westray, Orkney Library and Archive in Kirkwall, and Orkney SMR. A report will be produced for *Discovery and Excavation in Scotland*.

6.0 Survey Results

A register detailing the recorded marks can be found in Appendix 1 of this report. The following presents a discussion of the survey results by area, starting with the southwest end chamber, and then continuing clockwise around the interior of the cairn. Fig. 06 shows the distribution of the decorated stones recorded during this survey and shows the way in which the cells have been numbered.

6.1 Southwest chamber, southeast elevation (Fig. 07)

The southwest chamber contains the clearest and best-reported examples of surface decoration in the cairn, reflecting the differential level of preservation in this end of the site, as noted by Corrie in 1928. The substantial lintel over the southeast side cell (cell 12) contains an extensive grouping of pecked motifs (No.O4), comprising meandering arcs ("eyebrows") over small cupmarks, with other cupmarks in groups of three or four.

On the left-hand side of the stone are what appears to be two initials (No.07), either "EO" or "EB", which might be a more recent addition. Although the top lines of these were shown by Petrie (1853, 1857, 1863 – see Figs. 15-17), he did not show the carvings as they appear now. It therefore seems likely that the letters were added after the cairn was exposed, as by the time of the RCAHMS visit in 1929, they discovered that "the group...contains in addition two characters resembling an E and an Θ " (RCAHMS 1946, 189; see Fig. 18).

At approximately 1700mm above floor level, above and to the left (northeast) of No.04 and No.07 are three stones of interest (Nos. 08, 09 and 10). These were illustrated by Petrie (1857, 1863). The left-hand stone in the group, No.08, is a 425x205mm stone with a small circular depression in its centre that would appear to be natural rather than a deliberate cupmark. Stone No.09, measuring 245x245mm and the central stone of this group of three, was also illustrated by Petrie but does not appear to have any convincing markings visible today.

Immediately to the right (southwest) of No.09 is stone No.10, measuring 300x300mm and with a circular motif, and other vaguer marks, lightly pecked onto its face. These marks have been rubbed and are becoming worn. It is worth noting that although this stone has been illustrated by Petrie (1857, Plate 3, No.4; 1863, 34), and was further recorded by Shee Twohig (1981, 227; Fig. 258D), in each of these illustrations the stone appears to be oriented differently (see Figs. 15, 16 and 19). This factor coupled with its position on the edge of loose walling might suggest that it is not quite *in situ* and was perhaps moved slightly during the early 20th-century consolidation works.

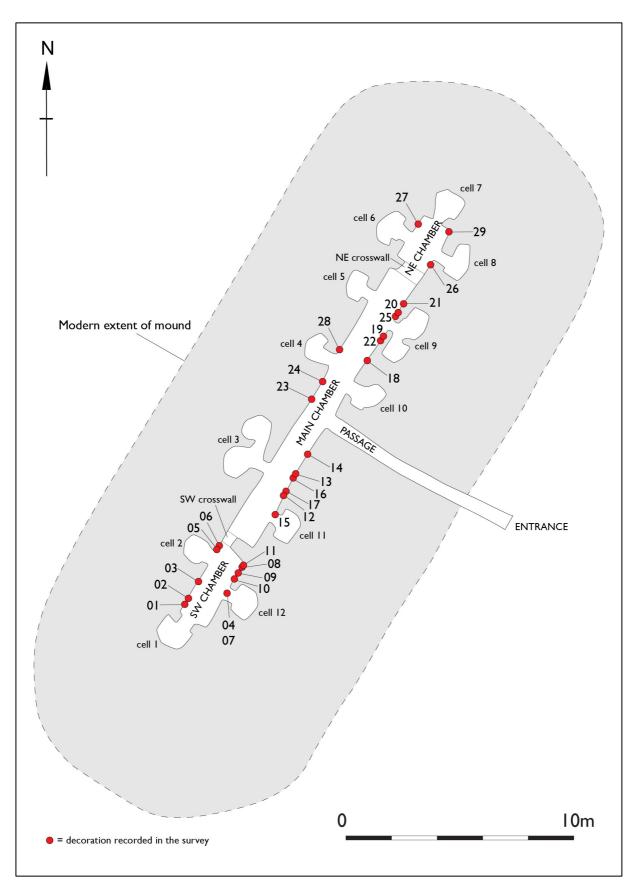


Fig. 06: Plan of the Holm of Papa Westray South cairn showing location of carvings recorded during 2018 survey. Image © Antonia Thomas 2019.

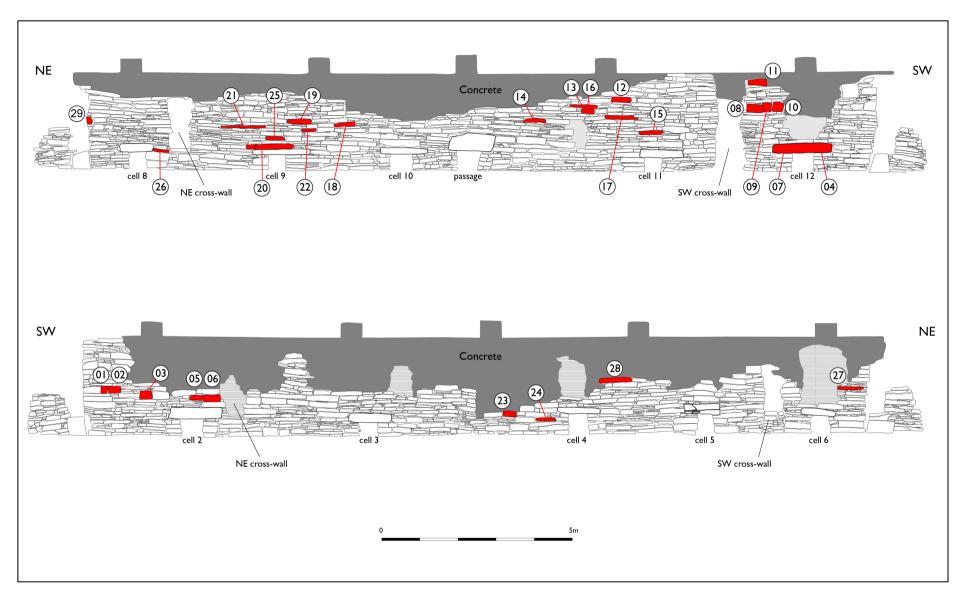


Fig. 07: Southeast (top) and northwest (bottom) internal elevations showing location of recorded decoration. Based on photogrammetric model produced by Hugo Anderson-Whymark for HES. Image © Historic Environment Scotland and Antonia Thomas 2019.

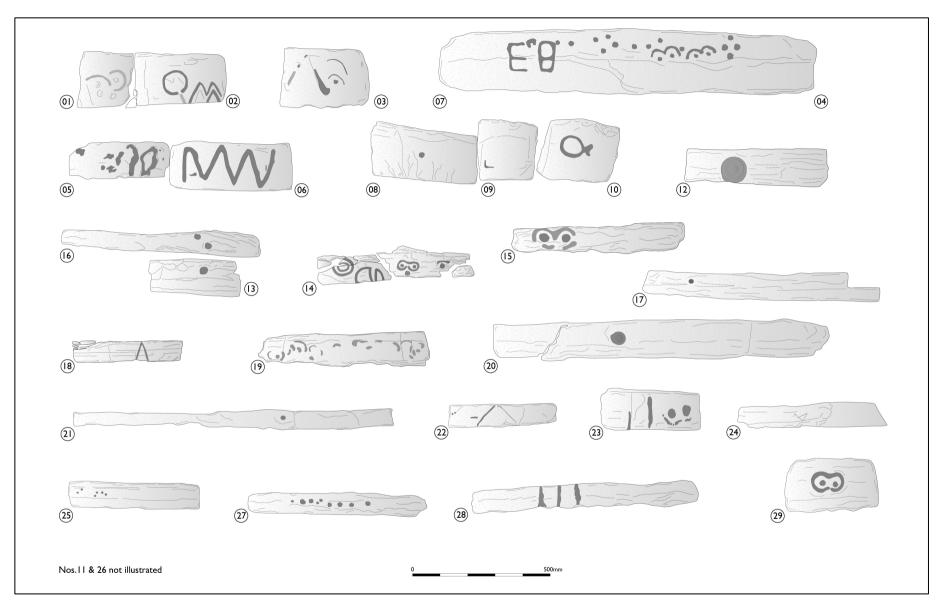


Fig. 08: Interpretation drawings of the decoration of recorded in the Holm of Papa Westray South tomb. Image © Antonia Thomas 2019.

Approximately 600mm above stone No.08, on the top course of the extant walling is stone No.11, which has a possible incised chevron visible on its surface. At approximately 2300mm above the floor level it was not able to be inspected at close range and is not illustrated in this report. It had not been recorded previously.

6.2 Southwest chamber, northwest elevation (Fig. 07)

Approximately 480mm to the right (northeast) of the end wall, and c.1200mm above the floor level, are two stones with traces of weathered decoration, possibly originally part of the same stone. No.01 measures 180x200mm and has smoothed, weathered pecking in an amorphous curvilinear design.

Immediately to the right of stone No.01, No.02 is a rectangular block measuring 330x170mm and has clear pecking forming a circular motif containing faint chevrons, and to the left of two, possibly three, offset chevrons (see Fig. 12 below). Two stones to the right (northeast) of No.02 is No.03, a rectangular block of stone measuring 310x230mm and c.1070mm above the floor. This has an inverted 'V' pecked into its face and is perhaps illustrated by Petrie (1853), but the other way up (see Fig. 15g). These marks may augment some natural markings and much of the stone's surface has been smoothed, rendering the marks quite indistinct. Stone Nos. 01, 02 and 03 have not been recorded previously.

Four courses above the lintel of the side-cell to the left of the cross-wall, at c.1080mm above floor level, and in the uppermost course of the extant walling, are stones No.05 and No.06 (see Fig. 13). No.05 measures 350x130mm with an opposed fan motif¹ crudely pecked into its right-hand side and other, less coherent, peck-marks visible. Immediately to the right is No.06, a much darker-coloured stone measuring 460x170mm with a meandering zigzag pecked into its face. The left-hand side of this stone has been smoothed by rubbing. Curiously, although No.6 was recorded and illustrated by Petrie in any of his accounts of the site (see Figs. 15-17, this report), the neighbouring stone of No.05 was not. This factor coupled with the stone's position on the upper course and edge of the extant walling suggest that it was not *in situ* at the time of Petrie's visit. This decoration is first illustrated by RCAHMS in their records of their survey (RCAHMS 1946,188, Fig.270; reproduced in Fig. 18 this report). Although the motifs and execution appear authentic, this stone may have been moved to its

¹ This motif is often popularly referred to as a "Brodger butterfly" after similar designs found at the Ness of Brodgar, Stenness: see Thomas 2016; 2019

current position during the early 20th century consolidation works.

6.3 Main chamber, northwest elevation (Fig. 07)

Almost directly opposite the passage opening is stone No.23. This has two thick parallel lines on the left-hand side, with two cupmarks on the right-hand side. These are probably natural, but there is some deliberate pecking arcing under the 'cups'. This had not been recorded previously. To the right of No.23 is No.24, which at just 420mm above floor level is the lowest of the stones recorded in this survey. This was first recorded by Bradley et al (2000, 52, Fig.8.4) and is a lightly incised opposed triangle motif on a 240x90mm rectangular stone. It is very different in character from the other stones in the tomb and very faint. To the right (northeast) of No.24, in the top course of walling at approximately 1420mm above the floor level, is No.28. This long (860x95mm) stone has three thick vertical lines pecked into its face.

6.4 Northeast chamber, northwest elevation (Fig. 07)

At the northeast end of the chamber, between the entrance to the northwest side cell and the end wall, is stone No.27. This is located at approximately 1180mm above the floor level, just outside of the collapsed outer walling of the side cell. This stone measures 1640x80mm and has a meandering run of eight small cupmarks along its outer edge. This was first recorded by Shee Twohig (1981, 227, Fig.258E; see Fig.19 this report).

6.5 Northeast chamber, southwest elevation (Figs. 09 & 10)

In the eastern corner of the northeast chamber, between the northeast and southeast elevations, is stone No.29. This occupies a prominent position in the corner at approximately 1200mm above the floor level. It measures approximately 300x195mm and has a faint, weathered pair of cupmarks surrounded by pecking, with the overall appearance of a spectacled pair of eyes (see Fig. 11). Other faint peckmarks are also visible but very vague. The stone itself can be seen in archive photo SCO1219133, which was taken in 1929, and would have been exposed above the line of the rubble prior to the site's consolidation (Figs .09, 10). This had not been recorded previously. Three courses and 520mm up from the floor between the lintel over the entrance to the northeast cell and the cross-wall separating the northeast chamber from the main chamber, is No.26. This 430x70mm has vague pecking visible on its surface, although these are likely to be natural. This had not been recorded previously and is not illustrated in this report.

6.6 Main chamber, southeast elevation (Fig. 07)

The southeast elevation of the main chamber contains a significant concentration of extant carvings. Six stones were recorded in the stretch of walling to the southwest of the entrance, between the passage opening and the cross-wall separating the southwest end chamber from the main chamber.

No.12 was first described by Thomas (1852, 128): "on the side wall near the entrance, and about six feet from the floor, there is a neatly-engraved circle about four inches in diameter". At approximately 1900mm above floor level, it is one of the highest stones recorded in the survey. This stone was not further described by Petrie, or Shee Twohig, and the circle is possibly a natural geological feature (see discussion in section 7.4 below).

Four stones below No.12, at approximately 1460mm above the floor level, was No.17, a long stone measuring 860x110mm with a vague and shallow 'cup' in its left-hand side. This is also likely to be natural and had not been recorded previously.

To the left (northeast) of No.12 and at approximately 1600mm above floor level, No.13 measures 300x155mm and has a small cup pecked into its face. This is likely to be natural, as it appears to correspond to ripples in the face of the stone. Immediately above No.13, No.16 is a long (710x100mm) stone approximately 1700mm above floor level. There are two shallow 'cups', each circa 20mm in diameter and adjacent to one another towards the right-hand end of the stone, but these might be natural. No.14, at approximately 1320mm above floor level and c.800mm northeast of Nos. 13 and 16, was illustrated by Petrie (1853; see Fig 15d this report), although it has since become considerably degraded. This 570x140mm stone is now split into several pieces, but has extensive pecked decoration including a spectacled eye design, a circle, and other peckmarks (see Fig. 11). To the right (southwest) of stones No.12 and No.17 is No.15, three courses above the lintel to the side cell and approximately 1070mm above floor level. This long stone measures 625x110mm and have two distinct 30mm diameter cups pecked into its left-hand side, which have vague 'eyebrows' over and around them forming a faint spectacled eye motif (see Fig. 11); this may be the second stone noted by Thomas (1852, 128).

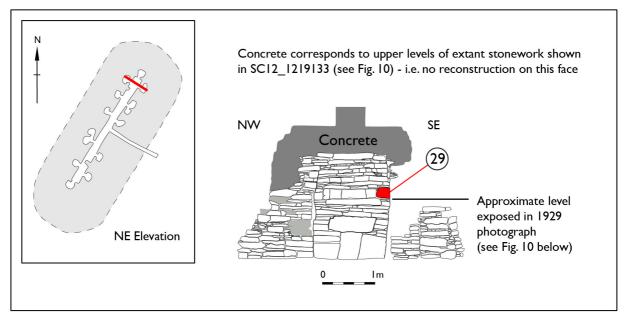


Fig. 09: Northeast internal elevation / cross-section showing position of stone No.29. Image $\ensuremath{\mathbb{C}}$ Historic Environment Scotland and Antonia Thomas 2019.

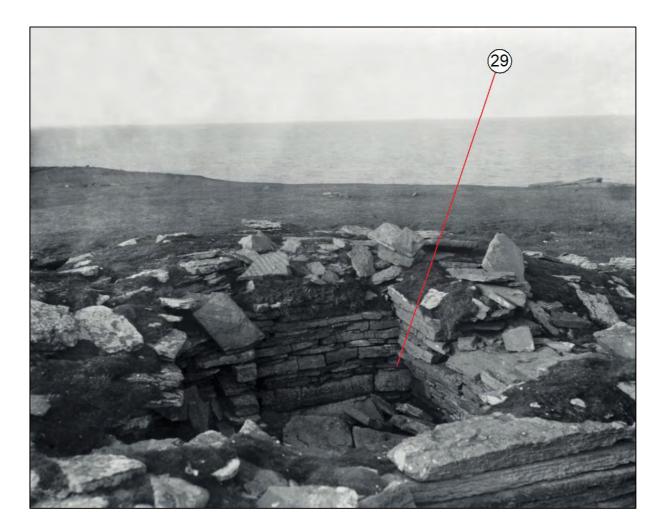


Fig. 10: Northeast end of interior in 1929 showing position of stone No.29. Original image © Historic Environment Scotland (A 52933) and reproduced with kind permission; annotated by author.

A further six stones were recorded in the southeast elevation to the northeast of the passage opening, in the stretch of walling between the passage opening and the cross-wall separating the northeast end chamber from the main chamber. These are particularly concentrated around the opening of cell 9, the last cell before the northeast cross-wall separating the main chamber from the northeastern chamber. No.18 is a rectangular stone measuring 550x115mm and c.1240mm above floor level and located between cells 9 and 10. It has an inverted 'V' pecked into its face (see Fig. 12). It is possible that this is one of the stones recorded by Petrie in his loose drawings (1853) but which was thought to be 'missing' (see Fig15c). No.19 is a 650x140mm stone, c.1320mm above floor level to the right (southwest) of the cell entrance and has natural ripples across its face, some of which might be augmented / enhanced by wear or pecking.

In the course immediately above the lintel to the side cell, No.20 is a very long (1260x140mm) stone with a 50mm diameter circle just left (northeast) of its centre. This is similar to stone No.12 and might be the result of spalling. No.21, to the left (northeast) and c.1090mm above floor level, is another very long stone (1270x70mm) which has a much smaller 'cup' measuring 15mm in diameter which again might be natural. Two courses below No.19, to the right (southwest) of the cell opening and c.1080mm above floor level, is No.22, a 385x90mm stone with a weathered pecked diagonal line, possibly part of a zigzag or a chevron, and other peckmarks visible. Two courses above No.20 and c.850mm above the floor level, is No.25, a stone measuring 480x95mm with two arcs of small weathered peckmarks towards its left-hand side.

6.7 Passage

No surface marking or decoration was visible on the stonework within the passage.

6.8 Side cells

No surface marking or decoration was visible on the stonework within the side cells leading off the main chamber and end chambers.

7.0 Discussion

7.1 Stonework, construction and restoration

In common with other Neolithic chambered cairns in Orkney, the tomb has been built of fine drystone masonry, the local flagstone lending itself to easy quarrying and construction (Thomas 2016, 29). The Holm of Papa Westray South tomb, however, is unusual in its scale; at some 38m-long it is one of the largest passage graves known. The scale of its overall construction contrasts greatly with the size of the twelve side cells which lead off the chambers, and which are unusually small. This disjuncture between different scales is a feature of Neolithic architecture in Orkney (e.g. at the Ness of Brodgar: Thomas 2016, 138), and appears to have been a deliberate effect.

Descriptions of the cairn from the late 19th century (e.g. Anderson 1886, 283) suggest that the remains fell into considerable disrepair soon after Thomas' investigations. In the 80 years from the site's excavation to its being taken into Guardianship, the walls had become considerably ruinous, and it is not surprising that the surface of much of the interior stonework is in a poor state. On the basis of comparison of the 1929 photographs with the current appearance of the tomb (see for example Figs. 03 & 04), it appears that overall, relatively little reconstruction took place, although no records exist of the reconstruction by H.M. Office of Works (Davidson & Henshall 1989, 122).

The concrete roof appears to have been placed directly onto the surviving stonework, and this has left the interior poorly ventilated, an issue which was first highlighted in the 1930s (RCAHMS 1946, 188). Many of the walls are very wet and covered in a thick green algal growth, a problem exacerbated by the light and considerably worse under the rooflights. The algae make it difficult to identify any subtler forms of surface decoration (e.g. incised markings) and renders the existing markings vulnerable. In addition, many of the markings appear to have been rubbed and are becoming indistinct.

7.2 Surface decoration, motifs and execution

A total of 34 individual numbers were assigned (see Appendix 1). These include both decorated stones recorded in the survey, and stones described in antiquarian accounts but not located during the fieldwork. There is a significant number of stones which seem to have cup-marks of decoration forming meandering lines, with the lintel over the southeast side cell in the southwest chamber an excellent example (stone No.04 in this survey). This was identified by Petrie in the 1850s, and has been discussed several times since, particularly in relation to its apparently representational form. Several researchers have likened the markings to "…crude representations of the human face" (RCAHMS 1946, 189), and parallels can be drawn with the facial markings on the 'Westray Wifie' figurine (SF2289) recovered from the Links of Noltland settlement on Westray (Moore & Wilson 2011, 104, Illus.119).

In addition to the clear, and well-recorded occurrence of this motif seen on stones No.04 and 14, the recent survey has highlighted the possibility of other, less distinct examples (see Fig. 11). Stone No.15 comprises two cupmarks, with faint pecking arcing over, giving the impression of a weathered pair of spectacled eyes. A similar design can be seen on stone No.29 in the eastern corner of the northeast end chamber, which has been deliberately angled to make it more visible (Figs. 09 and 10). The predominance of these types of markings in the tomb is unusual in comparison to other Neolithic sites in Orkney (Thomas 2016, 38), and Holm of Papa Westray South has its own distinctive assemblage of motifs. It is significant that the many of the stones have natural 'cupmarks' and 'eyebrows', with ripples and small circular hollows caused by geological characteristics, and that these appear to have been deliberately chosen (see discussion in section 7.4 below). A significant number of stones also bear linear motifs such as parallel lines, chevrons and zigzags, and it is again notable that similar markings are suggested by the natural geological patterning in the stone. Given the evidence from other Neolithic sites in Orkney, (e.g. at the Ness of Brodgar: Thomas 2016, 216), this association between natural and human-made marks is unlikely to be a coincidence and would merit further research and investigation, and comparison with the assemblage from the Links of Noltland, for example, would be particularly interesting.

7.3 Context and distribution of decorated stones

With the exception of No.11, which was not examined closely, all of the recorded decoration occurs within 420mm and 1900mm above the current floor level, with most of the carvings occurring within a range of approximately 500-1500mm. This compares well with other examples of recorded passage grave art in Orkney, such as at Maeshowe (Thomas 2016, 2018). It is worth noting that the stones which appear to have markings caused by natural phenomena such as spalling, appear within the same height range, supporting the suggestion that they were deliberately selected. Although at some other Neolithic sites the visibility of carvings appears not to have been of prime concern (Thomas 2019), therefore, at the Holm of Papa Westray South the stones appear to have been located for visual impact. There is a concentration around some of the cell openings and on lintels (e.g. around cells 9 and 12), although this correlation is not consistent, and there is a notable lack around the passage entrance itself.

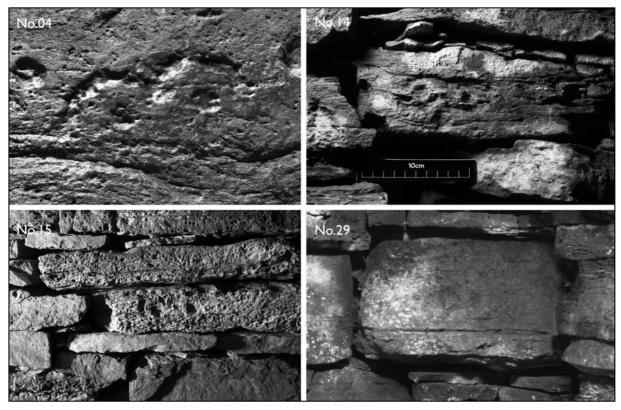


Fig. 11: Examples of stones with 'eyebrows' or 'spectacled' motifs. Clockwise from top left: Nos.04, 14, 29 and 15. All images © Historic Environment Scotland and Antonia Thomas 2019.

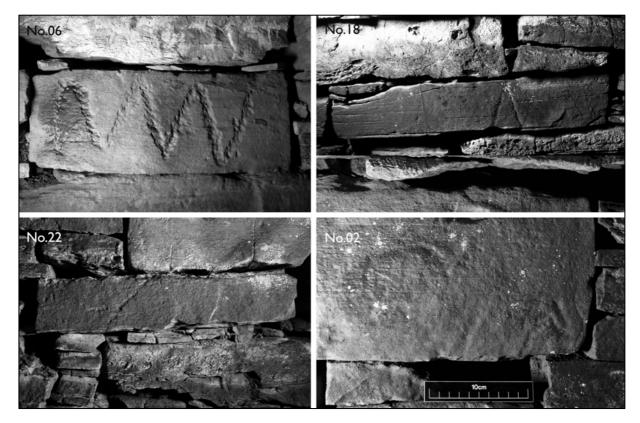


Fig. 12: Examples of stones with linear motifs. Clockwise from top left: Nos.06, 18, 02 (which also has curvilinear motifs) and 22. All images © Historic Environment Scotland and Antonia Thomas 2019.

7.4 Chronology and authenticity of decorated stones

With only a few exceptions, it appears that the markings recorded on the stones within the tomb have been there since it was built. However, as discussed above, many of the stones which were recorded during the survey have markings which are likely to be geological, rather than anthropogenic. Much of the stone used in the construction of the cairn appears to be prone to circular spalling caused by the differential weathering of spherical concretions within the sandstone, and it is possible that this explains stones Nos. 12 and 20, for example. As such, the peculiarities of the stone appear to lend themselves to 'cupmarks' and 'eyebrows', with ripples and small circular hollows common throughout.

This phenomenon was first noted by Thomas during his excavation: "it is so common to find geometrical figures upon the Orkney flags, from a semicrystallization of the pyrites which they contain, that I am unable to decide whether those seen in the Picts house are natural or not" (Thomas 1852, 128). This factor makes it quite easy to over-interpret natural marks, especially given how weathered the stones are. Despite these caveats, however, the stones with apparently 'natural' cups have been included in this report, as it seems likely that they were considered significant in the Neolithic. The position of the stones with possible natural 'cups' is remarkably similar to those with markings which are more easily identifiable as 'authentic', a pattern which implies the deliberate selection and placement of these stones.

This blurring of the natural and made is a common characteristic of the Neolithic in Orkney, and it is worth noting that at the Ness of Brodgar, many stones with natural markings were chosen and taken to the site and placed in the same way as carved stones (Thomas 2016, 216). The interpretation of markings as either 'natural' or 'human-made' is distorted further by examples such as stone No.23. Whilst the two cup-marks or hollows on its face are likely to be natural, there is deliberate pecking under these which respects the circular marks. A parallel can be found from the Ness of Brodgar, with stone SF3826, which has a natural solution hollow surrounded with an arc of small, deliberate peckmarks (author's personal archive).

Other questions surround the placement and position of the stones themselves and raise the possibility that certain stones were 'reinstated' during the consolidation works in the 1930s. Many of the stones with decoration seem to be on the top course, or the edge of walls near broken sections, which makes their placement slightly suspicious. For example, No.05, which is immediately adjacent to No. 06, was not recorded by Petrie. It seems unlikely that he would have missed this stone when he noted its neighbour, and the fact that it was only recorded after the restoration work (RCAHMS 1946, 189) suggested that it might not be in its original position. In terms of its style, however, No.05 sits happily within the suite of decoration expected in this Neolithic context. It is suggested therefore, that this stone was found amongst the rubble during the restoration and put into position in the nearest area of walling, making it 'authentic' but not necessary in its original position.

Stones No.23 and No.28 are similarly located in the top course of stonework where they could have been moved / reinstated. The possible movement of some of the stones is further suggested by stone No.10. This was recorded by Petrie in the 1850s, and then again by Shee Twohig in the 1970s, but has either been inaccurately recorded, or has changed orientation at some point between Petrie's record, and the consolidation of the site in the 1930s (see Figs. 15, 16 and 19, this report).

The visit by RCAHMS in 1935 noted a further 'new' addition to the tomb's carvings in the letters of No.07 (RCAHMS 1946, 188). Whereas the wavy lines of this inscription had been recorded by Petrie from the mid-19th century, it was only after the restoration work that the apparent letters (either 'EO' or 'EB') were added. It seems likely therefore that these were a later embellishment to the lintel, using the lines of an earlier marking (see Fig. 14).

Holm of Papa Westray South, Papa Westray, Orkney: Decorated Interior Stonework Survey 2018



Fig. 13: Stones No.05 (left hand stone) and No.06 (right hand stone). Note the positioning of No.05. Image © Historic Environment Scotland and Antonia Thomas 2019.



Fig. 14: Detail of No.07, a possible example of later graffiti using some of the marks of No.04. Image © Historic Environment Scotland and Antonia Thomas 2019.

7.5 Unlocated stones

In addition to the 29 stones recorded during the fieldwork and described in section 6 above, a further five numbers were allocated to unlocated stones. These are stones which had been described or illustrated previously but were not able to be correlated with any of the currently visible stones. Nos. 30-33 were all illustrated by Petrie in his loose drawings (1853; see Fig. 15 below), but with the exception of No.30 (which was also illustrated in Petrie 1857; see Fig. 16 below), were not reproduced by him in any of his published work and have not been located in subsequent surveys. No.30 is illustrated as approximately 180mm wide and comprising two circular motifs joined in the middle by a vertical line, on the southeast elevation (Petrie 1857, 61). It is possible that this is recorded as No.15 in the current survey, but as No.15 is on the northwest elevation, Petrie may have recorded this in the wrong location.

No.31 is illustrated in Petrie's loose drawings only and consists of a thick vertical line and some pecking. There are some finer horizontal lines illustrated which are likely to be natural. It is possible that this stone is No.23. No.32 refers to a pecked 'V' and various small cupmarks, with No.33 assigned to a pecked 'V'. Both of these are illustrated by Petrie in his loose drawings (1853) but do not feature in any subsequent publications.

No.34 was described by Thomas (1852, 128) as "another stone with the appearance of having two small circles, touching each other, engraved upon it". Thomas only describes this stone and No.12, suggesting that at the time of his description the clearly decorated stones in the southwest chamber were not visible, perhaps due to rubble collapse and infill. If this is the case, the other stone that Thomas describes is likely to be within the main chamber and might refer to one of the following stones: Nos. 14, 15, 16, or 23. This stone might also be the one illustrated by Petrie and assigned No.30 in the current survey.

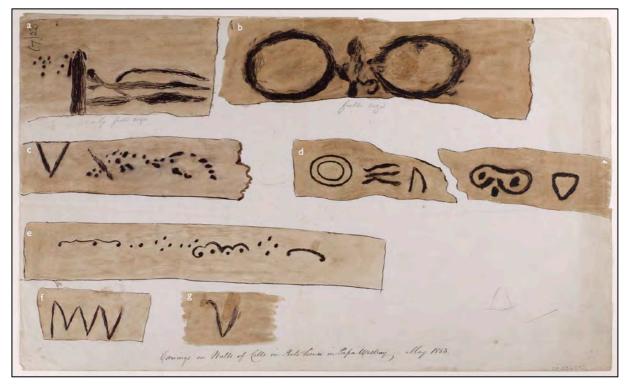


Fig. 15: Illustrations of decorated stones in the Holm of Papa Westray South tomb, drawn by George Petrie in 1853. Society of Antiquaries of Scotland MS 487(7), catalogue number DP236232. Image © Historic Environment Scotland and reproduced with kind permission; decoration annotated a-g by the author.

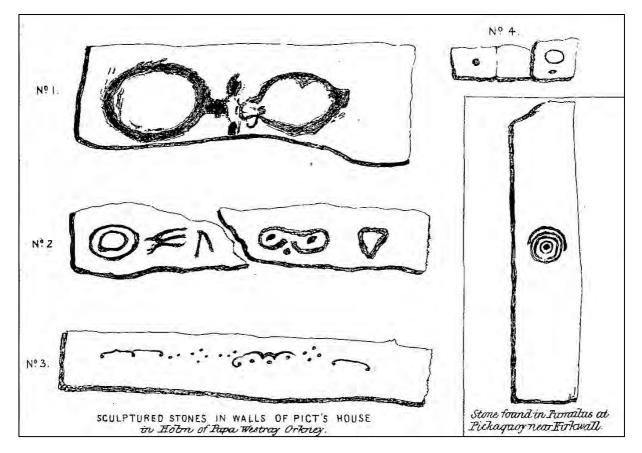


Fig. 16: Illustrations of decorated stones in the Holm of Papa Westray South tomb, published by Petrie, 1857, in the *Proceedings of the Society of Antiquaries of Scotland*. Image © Historic Environment Scotland and reproduced with kind permission.

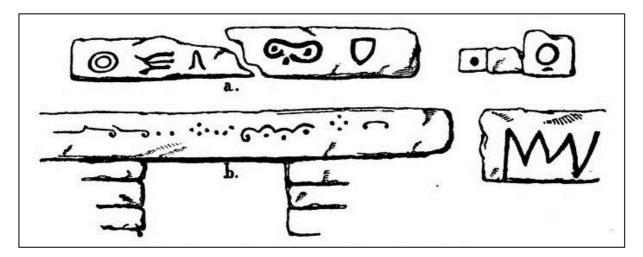


Fig. 17: Illustrations of decorated stones in the Holm of Papa Westray South tomb, published by Petrie, 1863, in the *Archaeological Journal*. Image © Historic Environment Scotland and reproduced with kind permission.

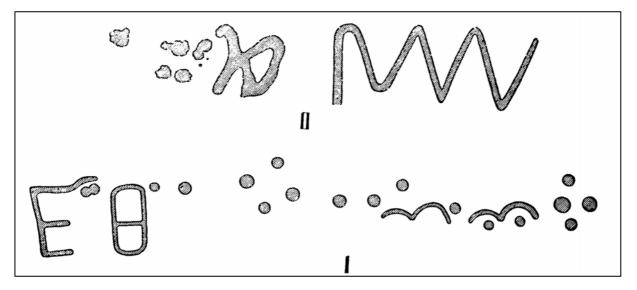


Fig. 18: Decorated stones in the Holm of Papa Westray South tomb, recorded by RCAHMS and published in RCAHMS 1946, 188, Fig. 270 Image © Historic Environment Scotland and reproduced with kind permission.

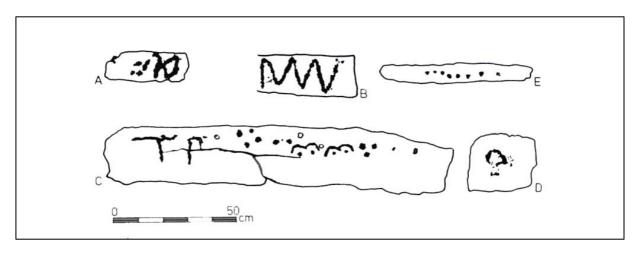


Fig. 19: Decorated stones in the Holm of Papa Westray South tomb, recorded by Elizabeth Shee Twohig and reproduced in Shee Twohig 1981, Fig.258. Reproduced with kind permnission.

8.0 Conclusions and recommendations

The programme of survey work undertaken by the author in 2018, in combination with the photogrammetry survey undertaken by Hugo Anderson-Whymark in 2016, has led to the identification of a significant number of decorated stones in the tomb, many of which had not been recorded previously. The project has produced a detailed baseline record of the site, which will allow informed conservation management and which can be used by both researchers and members of the public. There is considerable potential to integrate these surveys at different scales, by linking the photogrammetry and digital photography with written and drawn records.

Further detailed survey by the author in collaboration with photogrammetric modelling of the recorded motifs by Hugo Anderson-Whymark would be a useful additional element to this, and these models could be combined with further interpretation by the author to create a widely accessible and innovative digital resource. As such, this project has the potential to make a significant contribution not only to the important and growing body of research into Orkney's Neolithic rock art, but also to Papa Westray's growing tourism industry.

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Appendix 1: Decoration discussed in this report

No.	Location	Facing	Height above floor	Notes from survey and archive research
01	NW wall in SW chamber	SE	c.1200mm	Block of stone measuring 180x200mm. Left-hand edge of stone is 480mm to the right of the end wall. Originally formed one stone with no.02. Smoothed, weathered pecking visible, forming an amorphous curvilinear design.
02	NW wall in SW chamber	SE	c.1200mm	Rectangular block of stone measuring 330x170mm, immediately to the right of no.1 and originally forming part of the same stone. A vague circular motif is visible, with offset chevrons / zigzags below and to the right-hand side of the stone.
03	NW wall in SW chamber opposite opening to cell 12	SE	c.1070mm	Rectangular block of stone measuring 310x230mm. An inverted 'V' with an upkick/return on the right-hand side, which has been pecked and smoothed, although these are possibly the result of augmentation of natural marks. This might be shown by Petrie on his loose drawings, but the other way up - see Fig. 15g
04	Lintel over SE side cell in SW extension (with No.07)	NW	c.540mm	Extensive grouping of pecked designs on large stone lintel. These include the famous eyebrows and small triple / quadruple cup motifs. The markings which look like letters to the left have been assigned a different number (no.7) as they might not be contemporary (see below), although the tops of these were shown by Petrie as wavy lines.
05	NW wall in SW chamber, two courses above lintel of cell 2	SE	c.1080mm	Irregular, rectangular stone measuring 350x130mm with pecked 'Brodgar butterfly' motif, four courses above the NW side-cell lintel, in the top course of the wall. Does not appear to be shown by Petrie.
06	NW wall in SW chamber, two courses above lintel of cell 2	SE	c.1080mm	Immediately to the right of no.5, a rectangular stone measuring 460x170mm with a zigzag comprising 140mm high lines pecked into its face. Very rubbed on its left-hand side.

Lintel over SE side cell in SW extension (with No.04)	NW	c.540mm	To the left of no.4, what looks like two initials – possibly EO, or EB, pecked into the stone. The top lines of these appear to have been shown by Petrie (see Fig. 15e), but these could be relatively modern graffiti. The letters are 110mm high.
SE wall in SW extension	NW	c.1700mm	A rectangular stone measuring 425x205mm, with a small circular depression in its middle. This is probably natural, but the stone has been illustrated repeatedly since Petrie. Forms the left-hand stone of a group of three stones (Nos. 08, 09 and 10)which have often been illustrated together.
SE wall in SW extension	NW	c.1700mm	This square stone, measuring 245x245mm, is the middle of the grouping of three formed by Nos.08, 09 and 10, and is shown in early drawings. It doesn't however seem to have any visible markings.
SE wall in SW extension	NW	c.1700mm	Immediately to the right of No.9, and forming a grouping of three stones with No.08 and No.09, this 300mm wide stone has a pecked circular motif, which is quite weathered and rubbed, and other marks which aren't too clear. Conflated by Davidson and Henshall as nos. 3 and 7. This stone has been represented many times, but looks slightly different each time, and even looks as though it might have rotated 90 degrees at one point, which given its position on the edge of the extant waling, is entirely possible.
SE wall in SW extension	NW	c.2300mm	Very high up above stone no.08, in the top course of the wall (and therefore possibly not in its original position), a large rectangular stone with a faint chevron on its face. Not viewed or photographed at close range during survey due to height.
SE elevation of main chamber	NW	c.1900mm	A rectangular stone measuring 515x90-150mm, with a circular design measuring 95mm towards its left-hand side. This may be natural and the result of spalling, but is probably the stone described by Thomas 1852.
SE elevation of main chamber	NW	c.1600mm	To the right of no.14 and directly below no.16, a stone measuring 300x155mm which seems to have a small cup pecked into its face near the top edge. This may be natural as it seems to correspond with ripples in the stone. This is possibly part of a larger stone which has degraded.
	SW extension (with No.04)SE wall in SW extensionSE elevation of main chamberSE elevation of mainSE elevation of main	SW extension (with No.04)NWSE wall in SW extensionNWSE elevation of main chamberNWSE elevation of mainNW	SW extension (with No.04)NWc.1700mmSE wall in SW extensionNWc.1700mmSE elevation of mainNWc.2300mmSE elevation of mainNWc.1900mmSE elevation of mainNWc.1600mm

14	SE elevation of main chamber	NW	c.1320mm	A degraded stone measuring 570x140mm overall but now split into several pieces, which has been illustrated and recorded from Petrie onwards (e.g. see Fig. 15d). Its pecked decoration comprises a circular design on its left-hand side, a semi-circular design and a spectacled eye design, along with other peck marks.
15	SE elevation of main chamber, above lintel to cell 11	NW	c.1070mm	Long stone measuring 625x110mm with two possible small cups (30mm diameter) ground into its left-hand side. These are quite faint and shallow, but there is the vague sense of an 'eyebrow' over the left-hand one and the spacing and size of the cups are similar to more convincing 'eyes' elsewhere in the tomb.
16	SE elevation of main chamber	NW	c.1700mm	Directly above no.13, a long stone measuring 710x100mm, with two shallow 'cups', possibly natural, circa 20mm in diameter next to each other diagonally near the centre of the stone.
17	SE elevation of main chamber	NW	c.1470mm	A long stone measuring 860x110mm with a vague and shallow 'cup' in its left-hand side, which may be natural.
18	SE elevation of main chamber	NW	c.1240mm	A rectangular stone measuring 550x115mm with an inverted V measuring 50mm wide pecked into its face. This might be one of the missing stones recorded by Petrie.
No.	Location	Facing	Height above floor	Notes from survey and archive research
19	SE elevation of main chamber	NW	c.1320mm	A rectangular stone measuring 650x140mm, with possible faint 'eyebrows' pecked into its face, although these are confused by the natural ripples in the stone.
20	SE elevation of main chamber, above lintel of cell 9	NW	c.540mm	A very long stone measuring 140x1260mm, with a circle similar to that on no.12 measuring 50mm in diameter. This might be the result of natural spalling.
21	SE elevation of main chamber, above lintel of cell 9	NW	c.1090mm	A very long, narrow stone measuring 70x1270mm with a small 'cup' in its middle, which is 15mm in diameter but likely to be natural – it is similar in appearance to the 'cup' on no.8 and no.17.

22	SE elevation of main chamber	NW	c.1080mm	A rectangular stone measuring 90x385mm with a pecked diagonal line, and other peckmarks visible. Similar to no.18 although not as clearly marked. Two courses below no.20 in the SE elevation.
23	NW elevation of main chamber	SE	c.470mm	Nearly opposite the passage opening, a blocky rectangular stone which parallel vertical lines pecked into its face, and two 'cups' on the right- hand side. These cups might be natural, but the left-hand one has deliberate pecking arcing underneath. Similar to one of the ones from the Ness of Brodgar (SF3826).
24	NW elevation of main chamber, opposite entrance passage	SE	c.420mm	To the left of the cell opening and nearly opposite the entrance passage, a rectangular stone measuring 90x240mm with a very faintly incised 'butterfly' motif on its face. Very different in character from the other stones, and not entirely convincing as a deliberate carving. First recorded by Bradley et al (2000)
25	SE elevation of main chamber, above lintel of cell 9	NW	c.850mm	Two course above no.20 in the SE elevation, a stone measuring 95x480mm with two arcs of faint, weathered peckmarks, which might be natural.
26	SE wall of NE chamber, part of entrance to cell 8	NW	c.520mm	Next to the crosswall in the NE extension, a stone measuring 70x430mm with vague pecking on its surface, which might be natural. The stone below has interesting natural markings.
27	NW wall in NE chamber, outside cell 6	SE	c.1180mm	A long stone measuring 80x1640mm and with a meandering run of at least 8 cupmarks along its edge. It is actually just outside of the NW cell, rather than in it, and is illustrated in the wrong place in Bradley et al 2000.
28	NW elevation of main chamber	SE	c.1420mm	On the top course of walling in the NW elevation, to the right of no.24, a long stone measuring 95x860mm with three parallel lines pecked into its edge.
29	E corner in NE extension	W	c.1200mm	Squarish block of stone measuring 195x300mm, placed in a deliberately eye-catching position in the eastern corner of the NE extension. Vague, weathered spectacled eyes visible in the centre of the stone and other incoherent pecking too. Stone is visible in archive photo SC01219133 (i.e. above the line of rubble filling the site before its restoration) so would

				have been exposed and weathered for a long time.
30	Unknown	Unknown	Unknown	Not found during survey but illustrated by Petrie.
31	Unknown	Unknown	Unknown	Not found during survey but illustrated by Petrie.
32	Unknown	Unknown	Unknown	Not found during survey but illustrated by Petrie.
33	Unknown	Unknown	Unknown	Not found during survey but illustrated by Petrie.
34	Unknown	Unknown	Unknown	Not found during survey but mentioned by Thomas. Thomas' description could relate to one of the following: no.14, no.15, no.16, no.23, or no.29.

Appendix 2: Cross-references from previous accounts

No.	Thomas 1852	Petrie 1857	Petrie 1863	Petrie 1853	RCAHMS 1946	Henshall 1963	Shee Twohig 1981	Davidson & Henshall 1989	Bradley et al 2000
01	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
02	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
03	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
04	n/a	Petrie 1857, Plate III, No.3	Petrie 1863, 34	Illustrate d - see Fig. 15e	P189: "(3) a row of dots and short curved lines" P188, Fig. 270	Plate 23, (A), (B)	P227: "1.153cm, h.26cm. Has a roughly made '7' and an arc with one elongated side. Two sets of pairs of arcs open downwards and each encloses a small dot. There are also a number of dots and cupmarks across the face of the stone. It is the lintel of	P122-123: "4. Lintel of the SE cell of the SW extension, 1.5m long. Two pairs of arcs with a cupmark below each arc, other cupmarks, and a symbol resembling 'EO' (Petrie 1857, 61, pl. I II No. 3; Petrie 1863, b; RCAMS figure 270; Henshall pl. 23; Twohig figure 258C; our plate 24 (p.81)	Location shown on P51, Fig.7

No.	Thomas 1852	Petrie 1857	Petrie 1863	Petrie 1853	RCAHMS 1946	Henshall 1963	Shee Twohig 1981	Davidson & Henshall 1989	Bradley et al 2000
							cell 2." Illustrated (Fig.258C)		
05	n/a	n/a	n/a	n/a	P.189: "However, it has now been found thaton the opposite or W. wall of the S. compartment there is a further group consisting of an angular zigzag, an indecipherab le character, and some dots "	Plate 23, (C)	P227: "A. 1.35cm, h.13cm. Coarsely picked lozenge. 3rd course above cell 4 lintel." Illustrated (Fig.258A)	P123: "6. Adjacent to 5, 0.35 m long. Unfinished joined lozenges (Henshall pl. 23; Twohig figure 258A)."	Location shown on P51, Fig.7
06	n/a	n/a	Petrie 1863, 34	lllustrate d - see Fig. 15f	P.189: "However, it has now	Plate 23, (C)	P227: "B. 1.49cm, h.18cm.	P123: "5. Above the NW cell in the SW	Location shown on P51,

No.	Thomas 1852	Petrie 1857	Petrie 1863	Petrie 1853	RCAHMS 1946	Henshall 1963	Shee Twohig 1981	Davidson & Henshall 1989	Bradley et al 2000
					been found thaton the opposite or W. wall of the S. compartment there is a further group consisting of an angular zigzag , an indecipherabl e character, and some dots"		Coarsely picked zigzag of 6 angles. Seventh course of walling above cell 4, immediately right of A." Illustrated (Fig.258B)	extension, 0.49m long, a zigzag of six angles (Petrie 1863; RCAMS figure 270; Petrie, Loose Drawings; Henshall pl. 23; Twohig figure 258B)."	Fig.7
					P188, Fig. 270				
07	n/a	Petrie 1857, Plate III, No.3	Petrie 1863, 34	(Part) illustrate d - see Fig. 15e	P.189: "However, it has now been found that the group numbered (3) above, which is on the lintel of the E. cell of the S. compartment	Plate 23, (B)	P227: "C. 1.153cm, h.26cm. Has a roughly made '7' and an arc with one elongated side. Two sets of pairs of arcs open downwards and each	P122-123: "4. Lintel of the SE cell of the SW extension, 1.5m long. Two pairs of arcs with a cupmark below each arc, other cupmarks, and a symbol resembling 'EO' (Petrie 1857, 61, pl. I II No. 3;	Location shown on P51, Fig.7

No.	Thomas 1852	Petrie 1857	Petrie 1863	Petrie 1853	RCAHMS 1946	Henshall 1963	Shee Twohig 1981	Davidson & Henshall 1989	Bradley et al 2000
					, contains in addition two characters resembling an E and an ⊕" P188, Fig. 270		encloses a small dot. There are also a number of dots and cupmarks across the face of the stone. It is the lintel of cell 2."	Petrie 1863, b; RCAMS figure 270; Henshall pl. 23; Twohig figure 258C; our plate 24)."	
08	n/a	Petrie 1857, Plate III, No.4	Petrie 1863, 34	n/a		n/a	n/a	P122: "3. SE side of the SW extension of the chamber, not now identifiable. Probably one stone split into three, with two cupmarks and an oval (Petrie 1857, 61, pl. III No. 4; Petrie 1863)."	Location shown on P51, Fig.7 (but wrongly shown as within cell rather than outside it)
09	n/a	Petrie 1857,	Petrie	n/a		n/a	n/a	P122: "3. SE side of the SW	Location shown

No.	Thomas 1852	Petrie 1857	Petrie 1863	Petrie 1853	RCAHMS 1946	Henshall 1963	Shee Twohig 1981	Davidson & Henshall 1989	Bradley et al 2000
		Plate III, No.4	1863, 34					extension of the chamber, not now identifiable. Probably one stone split into three, with two cupmarks and an oval (Petrie 1857, 61, pl. III No. 4; Petrie 1863)."	on P51, Fig.7 (but wrongly shown as within cell rather than outside it)
10	n/a	Petrie 1857, Plate III, No.4	Petrie 1863, 34	n/a		n/a	P227: "D. 1.30cm, h.30cm. Has a lightly picked circle with other pickmarks to the right and below. In cell 2, 14th course of walling." Illustrated (Fig.258D)	P122: "3. SE side of the SW extension of the chamber, not now identifiable. Probably one stone split into three, with two cupmarks and an oval (Petrie 1857, 61, pl. III No. 4; Petrie 1863)." P123: "7. SE cell of the SW extension, 0.3m long. Lightly	Location shown on P51, Fig.7 (but wrongly shown as within cell rather than outside it)

No.	Thomas 1852	Petrie 1857	Petrie 1863	Petrie 1853	RCAHMS 1946	Henshall 1963	Shee Twohig 1981	Davidson & Henshall 1989	Bradley et al 2000
								peckmarks (Twohig figure 258D)."	
11	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
12	P128: "on the side wall near the entrance, and about six feet from the floor, there is a neatly- engraved circle about four inches in diameter"	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
13	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
14	n/a	Petrie 1857, Plate III, No.2	Petrie 1863, 34	Illustrate d - see Fig. 15d	P188: "(2) a group consisting of a double circle, a non- descript criss-cross, a chevron, something	n/a	n/a	P122: "2. SE side of the main chamber about 1.5m S of the entrance, 1.4m above the floor, now split in two, the surface damaged,	n/a

No.	Thomas 1852	Petrie 1857	Petrie 1863	Petrie 1853	RCAHMS 1946	Henshall 1963	Shee Twohig 1981	Davidson & Henshall 1989	Bradley et al 2000
					that resembles a pair of spectacles, and a heart" P188, Fig. 270			originally about O.6 m long. On the left part, two concentric circles, a shallow cup, and an inverted v; on the right part, joined circles with central dots (Petrie 1857, 61, pl. III No. 2; Petrie 1863, a; NMRS o/4816-7; this stone has recently been identified by J.N.G. Ritchie to whom we are grateful for the information that the motif between the circles and v on the left part and the lower cupmark and triangle on the right part are natural)."	
15	n/a,	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

No.	Thomas 1852	Petrie 1857	Petrie 1863	Petrie 1853	RCAHMS 1946	Henshall 1963	Shee Twohig 1981	Davidson & Henshall 1989	Bradley et al 2000
	although see no.034								
16	n/a, although see no.034	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
17	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
18	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
19	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
20	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
21	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
22	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
23	n/a, although see no.034	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
24	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	P52: Fig.8.4 (Locatio n shown on P51, Fig.7)
25	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

No.	Thomas 1852	Petrie 1857	Petrie 1863	Petrie 1853	RCAHMS 1946	Henshall 1963	Shee Twohig 1981	Davidson & Henshall 1989	Bradley et al 2000
26	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
27	n/a	n/a	n/a	n/a	n/a	n/a	P227: "E. 1.64cm, h.8cm. Has a row of eight small dots. In cell 9, on right, 118cm above ground level." Illustrated (Fig.258E)	P122: "8. NW cell of the NE extension of the chamber, 1.2 m above ground level, 0.64 m long. A row of eight small dots (Twohig figure 258E)."	Location shown on P51, Fig.7 (but erroneou sly shown as within cell rather than outside it)
28	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
29	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
00	n/a	Petrie 1857, Plate III, No.1	n/a	Illustrate d - see Fig. 15b	n/a	n/a	n/a	P122: "1. SE side of the main chamber, not now identifiable, 0.18m long. Two circles joined by a horizontal line, perhaps with two cupmarks (Petrie 1857, 61, pl.III No.1; Petrie Loose Drawings;	n/a

No.	Thomas 1852	Petrie 1857	Petrie 1863	Petrie 1853	RCAHMS 1946	Henshall 1963	Shee Twohig 1981	Davidson & Henshall 1989	Bradley et al 2000
								not included in Petrie 1863."	
31	n/a	n/a	n/a	Illustrate d - see Fig. 15a	n/a	n/a	n/a	P123: "9. Position in chamber not known. A vertical line and small dots, three horizontal lines likely to be natural."	n/a
32	n/a	n/a	n/a	lllustrate d – see Fig. 15c	n/a	n/a	n/a	P123. "10. Ditto [i.e. Position in chamber not known]. A pecked v and a number of cupmarks. Noted as "drawn by Petrie Loose Drawings) but not published by him."	n/a
33	n/a	n/a	n/a	Illustrate d - see Fig. 15g	n/a	n/a	n/a	P123. "11. Ditto [i.e. Position in chamber not known]. A pecked v. Noted as "drawn by Petrie Loose	n/a

No.	Thomas 1852	Petrie 1857	Petrie 1863	Petrie 1853	RCAHMS 1946	Henshall 1963	Shee Twohig 1981	Davidson & Henshall 1989	Bradley et al 2000
								Drawings) but not published by him."	
34	P128: "another stone with the appearanc e of having two small circles, touching each other, engraved upon it"	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Appendix 3: Photographic archive

File name (TIFF)	Description	Direction	Date taken
HoPWS18 18-06-15 001	SW end wall and cell opening cell in SW extension of tomb	SW	15 th June 2018
HoPWS18 18-06-15 002	Carving no.01 (NW elevation, SW extension of tomb)	NW	15 th June 2018
HoPWS18 18-06-15 003	Carving no.01 (NW elevation, SW extension of tomb), with scale	NW	15 th June 2018
HoPWS18 18-06-15 004	Carvings nos. 01 and 02 (NW elevation, SW extension of tomb)	NW	15 th June 2018
HoPWS18 18-06-15 005	Carvings nos. 01 and 02 (NW elevation, SW extension of tomb)	NW	15 th June 2018
HoPWS18 18-06-15 006	Carving no.02 (NW elevation, SW extension of tomb), with scale	NW	15 th June 2018
HoPWS18 18-06-15 007	Carving no.02 (NW elevation, SW extension of tomb), with scale	NW	15 th June 2018
HoPWS18 18-06-15 008	Carving no.03 (NW elevation, SW extension of tomb)	NW	15 th June 2018
HoPWS18 18-06-15 009	Carving no.03 (NW elevation, SW extension of tomb)	NW	15 th June 2018
HoPWS18 18-06-15 010	Carving no.04 (lintel over SE side cell in SW extension)	SE	15 th June 2018
HoPWS18 18-06-15 011	Carving no.04 (lintel over SE side cell in SW extension)	SE	15 th June 2018
HoPWS18 18-06-15 012	Carving no.04, detail	SE	15 th June 2018
HoPWS18 18-06-15 013	Carvings nos. 05 and 06 (NW elevation, SW extension of tomb)	NW	15 th June 2018
HoPWS18 18-06-15 014	Carving no.05 (NW elevation, SW extension of tomb)	NW	15 th June 2018
HoPWS18 18-06-15 015	Carving no.06 (NW elevation, SW extension of tomb)	NW	15 th June 2018
HoPWS18 18-06-15 016	Carving no.07 (lintel over SE side cell in SW extension)	SE	15 th June 2018
HoPWS18 18-06-15 017	Carving no.07 (lintel over SE side cell in SW extension)	SE	15 th June 2018
HoPWS18 18-06-15 018	Carving no.08 (SE elevation, SW extension of tomb)	SE	15 th June 2018
HoPWS18 18-06-15 019	Carving no.09 (SE elevation, SW extension of tomb)	SE	15 th June 2018
HoPWS18 18-06-15 020	Carving no.10 (SE elevation, SW extension of tomb)	SE	15 th June 2018
HoPWS18 18-06-15 021	Carving no.10 (SE elevation, SW extension of tomb), with scale	SE	15 th June 2018
HoPWS18 18-06-15 022	Carving no.14 (SE elevation, main chamber), detail of left-hand side with scale	SE	15 th June 2018

File name (TIFF)	Description	Direction	Date taken
HoPWS18 18-06-16 001	General view of interior, along SE chamber wall	NE	16 th June 2018
HoPWS18 18-06-16 002	General view of main chamber looking towards NE crosswall	NE	16 th June 2018
HoPWS18 18-06-16 003	General view of main chamber looking towards SW crosswall	SW	16 th June 2018
HoPWS18 18-06-16 004	Carvings nos. 05 and 06 (NW elevation, SW extension of tomb)	NW	16 th June 2018
HoPWS18 18-06-16 005	Carving no.12 (SE elevation, main chamber)	SE	16 th June 2018
HoPWS18 18-06-16 006	Carvings nos. 13 and 16 (SE elevation, main chamber) with scale	SE	16 th June 2018
HoPWS18 18-06-16 007	Carving no.14 (SE elevation, main chamber), with scale	SE	16 th June 2018
HoPWS18 18-06-16 008	Carving no.15 (SE elevation, main chamber), with scale	SE	16 th June 2018
HoPWS18 18-06-16 009	Carving no.15 (SE elevation, main chamber)	SE	16 th June 2018
HoPWS18 18-06-16 010	Carving no.17 (SE elevation, main chamber), with scale	SE	16 th June 2018
HoPWS18 18-06-16 011	Carving no.18 (SE elevation, main chamber)	SE	16 th June 2018
HoPWS18 18-06-16 012	Carving no.18 (SE elevation, main chamber), detail	SE	16 th June 2018
HoPWS18 18-06-16 013	Carving no.19 (SE elevation, main chamber)	SE	16 th June 2018
HoPWS18 18-06-16 014	Carving no.19 (SE elevation, main chamber), detail	SE	16 th June 2018
HoPWS18 18-06-16 015	Carving no.20 (SE elevation, main chamber), with scale	SE	16 th June 2018
HoPWS18 18-06-16 016	Carving no.21 (SE elevation, main chamber)	SE	16 th June 2018
HoPWS18 18-06-16 017	Carving no.21 (SE elevation, main chamber), detail	SE	16 th June 2018
HoPWS18 18-06-16 018	Carving no.22 (SE elevation, main chamber)	SE	16 th June 2018
HoPWS18 18-06-16 019	Carving no.22 (SE elevation, main chamber)	SE	16 th June 2018
HoPWS18 18-06-16 020	Carving no.23 (NW elevation, main chamber), with scale	NW	16 th June 2018
HoPWS18 18-06-16 021	Carving no.23 (NW elevation, main chamber), detail with scale	NW	16 th June 2018
HoPWS18 18-06-16 022	Carving no.24 (NW elevation, main chamber), detail with scale	NW	16 th June 2018

HoPWS18 18-06-16 023	Carving no.25 (SE elevation)	SE	16 th June 2018
HoPWS18 18-06-16 024	Carving no.26 (SE elevation, NE extension of tomb)	SE	16 th June 2018
HoPWS18 18-06-16 025	Carving no.28 (NW elevation, main chamber), detail with scale	NW	16 th June 2018
HoPWS18 18-06-16 026	Carving no.28 (NW elevation, main chamber), with scale	NW	16 th June 2018
HoPWS18 18-06-16 027	Carving no.29 (E corner of NE extension)	E	16 th June 2018
HoPWS18 18-06-16 028	Carving no.29 (E corner of NE extension), context shot showing position in	E	16 th June 2018
HoPWS18 18-06-16 029	Crosswall at NE end of tomb interior	NE	16 th June 2018
HoPWS18 18-06-16 030	Carving no.14 (SE elevation, main chamber), detail of right-hand side, with scale	SE	16 th June 2018

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ÀRAINNEACHD EACHDRAIDHEIL ALBA

Historic Environment Scotland Edinburgh EH9 1SH

0131 668 8600

Historic Environment Scotland - Scottish Charity No. SC045925 Registered Address: Longmore House, Salisbury Place, Edinburgh EH9 1SH



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