

Future Thinking on Carved Stones in Scotland: A Research Framework

Sally Foster, Katherine Forsyth, Susan Buckham and Stuart Jeffrey



With contributions from:

Marcus Abbott, Laila Kitzler Åhfeldt, Tertia Barnett, Bruce Bishop, David Breeze, David Caldwell, Murray Cook, Neil Curtis, Audrey Dakin, Fiona Davidson, Stephen Driscoll, Iain Fraser, Shannon Fraser, Simon Gilmour, Moira Greig, Marta Díaz Guardamino, Mark Hall, Strat Halliday, Isabel Henderson, John Hughes, Fern Insh, Andy Meirion Jones, Siân Jones, Dianne King, Murdo Macdonald, Cait McCullagh, Peter McKeague, Adrián Maldonado, Gilbert Márkus, Hugh Morrison, Colin Muir, Gordon Noble, Emma O'Riordan, John Picken, Edwina Proudfoot, John Raven, Anna Ritchie, Matthew Ritchie, Judith Roebuck, Christa Roodt, Nigel Ruckley, Jeff Sanders, Ian G Scott, Bill Stephens, Antonia Thomas, George Thomson, Sharon Webb, Iain Ross Wallace, Kelsey Jackson Williams

This document comprises the core text of *Future Thinking on Carved Stones in Scotland: A Research Framework*, published online on 24 August 2016 at www.scottishheritagehub.com/content/future-thinking-carved-stones-scotland as part of the Scottish Archaeology Research Framework (ScARF).

The figures appear on the online version. It should be read alongside the Case Studies (online, or available in a separate pdf).

It has been produced in this pdf format because some users will find merit in reading it in a linear fashion, and to promote the use, application and development of the Framework.

Cover image: Peterhead Gleneagles c 1936. Crown Copyright: Historic Environment Scotland



Listen to the stones:

We fondly dedicate this work to the memory of John Higgitt (1946–2006)

The most generous of scholars and friends

Enthusiastic explorer of carved stones and their audiences

Co-creator and first Chair of the National Committee on Carved Stones in
Scotland (1993–2003)

CONTENTS

LIST OF ABBREVIATIONS

LIST OF CASE STUDIES

ACKNOWLEDGEMENTS

EXECUTIVE SUMMARY

1. INTRODUCTION

- 1.1 Project background and aims
- 1.2 Definition of terms
- 1.3 Why focus on carved stones?
- 1.4 Framework strategy
 - 1.4.1 Approach
 - 1.4.2 Understanding value

2. CURRENT STATE OF KNOWLEDGE

- 2.1 Prehistoric rock art
- 2.2 Roman
- 2.3 Early medieval
 - 2.3.1 The material
 - 2.3.2 Scholarship before the 1990s
 - 2.3.3 A new corpus?
 - 2.3.4 Other recording efforts
 - 2.3.5 Analysis
 - 2.3.6 Inscriptions
 - 2.3.7 Research on protecting and recording early medieval carved stones
 - 2.3.8 Current developments in analysing early medieval carved stones
 - 2.3.9 Scotland's wider context
- 2.4 Later medieval
 - 2.4.1 The material
 - 2.4.2 Overview of previous studies
 - 2.4.3. Reassessment of West Highland sculpture
 - 2.4.4 Research on other classes of later medieval gravestones
 - 2.4.5 Research presented at the Monuments and Monumentality Conference at Stirling in 2011
 - 2.4.6 Priorities for future research
- 2.5 Architectural sculpture
 - 2.5.1 *In-situ* architectural sculpture
 - 2.5.2 *Ex-situ* architectural fragments
 - 2.5.3 Masons' marks
 - 2.5.4 Foundations, sundials and other ornamental sculpture

- 2.6 Gravestones
 - 2.6.1 The material
 - 2.6.1 Accessibility of information
 - 2.6.2 Recording graveyards: the work of antiquarians, local societies and individuals
 - 2.6.3 Recording and researching graveyards: the work of heritage bodies
 - 2.6.4 Academic studies and theoretical approaches
- 2.7 Public monuments
 - 2.7.1 War memorials
 - 2.7.2 Statues and other public commemorative monuments
 - 2.7.3 Boundary stones, milestones and wayside markers
 - 2.7.4 Market crosses
- 2.8 Heritage and conservation
 - 2.8.1 Historical perspective
 - 2.8.2 Some key themes

3. CREATING KNOWLEDGE AND UNDERSTANDING

- 3.1 Introduction
- 3.2 Theoretical perspectives
 - 3.2.1 Legacy of existing scholarship
 - 3.2.2 Materiality
 - 3.2.3 Biography
 - 3.2.4 Landscape
- 3.3 Acquiring knowledge
 - 3.3.1 Traditional recording methods
 - 3.3.2 Digital recording
- 3.4 Organising data
 - 3.4.1 Taxonomy—labelling types of stone
 - 3.4.2 Names—labelling individual stones
- 3.5 Datasets
 - 3.5.1 Handlists and corpora
 - 3.5.2 Thematic datasets and studies
 - 3.5.3 Audits
 - 3.5.4 Canmore
- 3.6 Scientific analysis
- 3.7 Ways of working
 - 3.7.1 Research environment
 - 3.7.2 Multidisciplinary, interdisciplinary and transdisciplinary working
- 3.8 Research recommendations
 - 3.8.1 Principles
 - 3.8.2 Problems
 - 3.8.3 Practice
 - 3.8.4 Projects: enhancing existing
 - 3.8.5 Projects: new approaches

4. UNDERSTANDING VALUE

- 4.1 Introduction
- 4.2 Identifying and evaluating value, significance and importance
- 4.3 Ways of valuing
 - 4.3.1 Historical
 - 4.3.2 Aesthetic
 - 4.3.3 Social
 - 4.3.4 Spiritual/religious
 - 4.3.5 Economic
 - 4.3.6 Cultural/symbolic, and political
 - 4.3.7 Temporal dimension of value
- 4.4 Research recommendations
 - 4.4.1 Principles
 - 4.4.2 Problems
 - 4.4.3 Practice
 - 4.4.4 Projects: enhancing existing
 - 4.4.5 Projects: new approaches

5. SECURING FOR THE FUTURE

- 5.1 Introduction
- 5.2 Ways of protecting
 - 5.2.1 Ownership and belonging
 - 5.2.2 Legislation and codes of practice
 - 5.2.3 Policy and guidance
 - 5.2.4 Physical conservation
- 5.3 Protection priorities
 - 5.3.1 Issues and dilemmas
 - 5.3.2 Authenticity
 - 5.3.3 At-risk categories of carved stones: loose and vulnerable
 - 5.3.4 At-risk categories of carved stones: carved stones in graveyards
 - 5.3.5 At-risk categories of carved stones: other categories of carved stones
- 5.4 Research recommendations
 - 5.4.1 Principles
 - 5.4.2 Problems
 - 5.4.3 Practice
 - 5.4.4 Projects: enhancing existing
 - 5.4.5 Projects: new approaches

6. ENGAGING AND EXPERIENCING

- 6.1 Introduction

- 6.2 Ways of engaging
 - 6.2.1 Through better understanding of values
 - 6.2.2 Through understanding audiences
 - 6.2.3 Through targeted interpretation
 - 6.2.4 Through encouraging creativity
 - 6.2.5 Through presentation and displays
 - 6.2.6 Through visitor studies
 - 6.2.7 Through education
 - 6.2.8 Through information management and access
 - 6.2.9 Through volunteering
- 6.3 Research recommendations
 - 6.3.1 Principles
 - 6.3.2 Problems
 - 6.3.3 Practice
 - 6.3.4 Projects: enhancing existing
 - 6.3.5 Projects: new approaches

7. LOOKING FORWARD

8. APPENDICES

- 8.1 Carved Stones Workshop report 1
- 8.2 Carved Stones Workshop report 2
- 8.3 Carved Stones Workshop report 3
- 8.4 Summary of the impact of workshops from questionnaires and feedback

9. BIBLIOGRAPHY OF WORKS CITED

10. PUBLISHED SOURCES

- 10.1 Prehistoric rock art
- 10.2 Roman
- 10.3 Early medieval
- 10.4 Later medieval
- 10.5 Architectural sculpture
- 10.6 Gravestones
- 10.7 Public monuments
- 10.8 Heritage and conservation
- 10.9 Digital

LIST OF ABBREVIATIONS

| | | | |
|--------|--|---------|--|
| 3D | Three-dimensional | NLS | National Library of Scotland |
| ACCORD | Archaeology Community Co-production of Research Data | NOSAS | North of Scotland Archaeology Society |
| AMD | Ancient Monuments Division | NMS | National Museums of Scotland |
| BEFS | Built Environment Forum Scotland | NTS | National Trust for Scotland |
| BIM | Building Information Modelling | OASIS | Online AccesS to the Index of archaeological investigationS |
| CI | Co-Investigator | OPIT | <i>Our Place in Time</i> (Scottish Government 2014) |
| CSAP | Carved Stone Adviser Project | PAS | Pictish Arts Society |
| CSDAP | Carved Stone Decay in Scotland Project | PI | Principal Investigator |
| ECMS | <i>Early Christian Monuments of Scotland</i> (Allen and Anderson 1903) | PKHT | Perthshire and Kinross Heritage Trust |
| EH | English Heritage (now also HE) | PMSA | Public Monuments and Sculpture Association |
| EMSSS | Early Medieval Stone Sculptures of Scotland | RAPP | Rock Art Pilot Project [of English Heritage] |
| ERA | England's Rock Art | RCAHMS | Royal Commission on the Ancient and Historical Monuments of Scotland (now part of HES) |
| FCS | Forestry Commission Scotland | RAE | Research Assessment Exercise |
| GIS | Geographic Information Systems | REF | Research Excellence Framework |
| HE | Historic England | RMMC | Runes, Monument and Memorial Carvings network |
| HEACS | Historic Environment Advisory Council Scotland | RSE | Royal Society of Edinburgh |
| HEFCE | Higher Education Funding Council for England | RTI | Reflectance Transformation Imaging |
| HERALD | Historic Environment Research Archives, Links and Data | SAFHS | Scottish Association of Family History Societies |
| HERs | Historic Environment Records | ScARF | Scottish Archaeological Research Framework |
| HES | Historic Environment Scotland | SERF | Strathearn Environs and Royal Forteviot |
| HESPS | <i>Historic Environment Scotland Policy Statement</i> (Historic Environment Scotland 2016) | SG | Scottish Government |
| HLF | Heritage Lottery Fund | SHEA | Scottish Historic Environment Audit |
| HS | Historic Scotland (now part of HES) | SHED | Scottish Historic Environment Data |
| ICCROM | International Centre for the Study and Restoration of Cultural Property | SHEP | <i>Scottish Historic Environment Policy</i> (Historic Environment Scotland 2016) SRP Scotland's Rural Past |
| ICOMOS | International Council on Monuments and Sites | SUAT | Scottish Urban Archaeological Trust |
| ISCS | International Scientific Committee for Stone [of ICOMOS] | SWAPNET | Stone Weathering and Atmospheric Pollution Network |
| LiDAR | Light Detection and Ranging | TCRE | Technical Conservation Research and Education |
| MBGRG | Moray Burial Ground Research Group | UK | United Kingdom |
| NADRAP | Northumberland and Durham Rock Art Project | UNESCO | United Nations Educational, Scientific and Cultural Organisation |
| NAS | National Archives of Scotland | WMF | World Monuments Fund |
| NCCSS | National Committee on Carved Stones in Scotland | WWI/II | First World War/Second World War |

LIST OF CASE STUDIES

1. Making a difference: the Govan Stones (Stephen Driscoll)
2. Bullauns and taxonomy (Katherine Forsyth)
3. Graveyard recording (Susan Buckham)
4. The Canmore Early Medieval Sculpture Upgrade Project: example (Anna Ritchie)
5. The tomb of Robert the Bruce (Iain Fraser)
6. The ACCORD project, community co-production (Stuart Jeffrey)
7. Imaging techniques: the 'Making a Mark' project (Andrew Meirion Jones and Marta Díaz Guardamino)
8. Materiality, Authenticity and Value: the wider implications of science-based conservation of carved stone (John Hughes and Siân Jones)
9. Magnetic susceptibility: a non-destructive geological technique used in provenancing carved stones (Nigel A Ruckley)
10. STONE Project, Edinburgh College of Art (Katherine Forsyth)
11. Donside: early medieval carved stones in a landscape context (Iain Fraser and Strat Halliday)
12. Faith in Cowal: a pilgrimage project and an early medieval cross (Gilbert Márkus)
13. The craft of carved stone replicas (Sally Foster)
14. Early medieval sculptured stone and the production of social value (Siân Jones)
15. Celtic Revival gravemarkers in Scotland (Murdo Macdonald)
16. The Hilton of Cadboll cross-slab: a complex and fragmented biography (Siân Jones and Sally Foster)
17. Glazed monument shelters (Colin Muir)
18. Strength in disciplinary collaboration: early medieval examples (Sally Foster)
19. Cradle of Scotland exhibition (Stephen Driscoll)
20. Edinburgh Graveyards Scoping Report (Susan Buckham)
21. Elgin Cathedral Redisplay Project (Hugh Morrison)
22. Crail Kirkyard, Fife: histories in wood and stone (Kelsey Jackson Williams)
23. Rhynie Woman and community engagement (Gordon Noble)
24. Creative archaeological visualization of the rock art at Ballochmyle (Matt Ritchie)
25. The Kelsae Stane (Katherine Forsyth)
26. Iona Abbey and Kirkmadrine (Adrián Maldonado)
27. Investigating our carved stone heritage: resources to support learning and engagement (Fiona Davidson)
28. Information management and online discovery (Peter McKeague)
29. Community engagement with rock art: the Northumberland and Durham Rock Art Project (Tertia Barnett)
30. HES Canmore Early Medieval Sculpture Upgrade Project (Iain Fraser)
31. The value of metric drawing (Ian G Scott)
32. The Stone of Scone (David Caldwell)
33. Rodney's Stone, Brodie Castle: weaving together conservation, art and education (Shannon Fraser)
34. Graffiti: meaning and value in the context of carved stones (Mark Hall)
35. Buried tombstones (Susan Buckham)
36. Wemyss Caves (Marcus Abbot)
37. Condition monitoring at the rock art at Ormaig (Matt Ritchie)
38. *The Picts: a learning resource*—an inclusive approach to integrating archaeology and the Curriculum for Excellence (Matt Ritchie)
39. Auchnaha cairn in Cowal, and its cross-carved stone (Gilbert Márkus)

EXECUTIVE SUMMARY

Aim

Our appreciation of the past relies heavily on the survival of stone monuments, buildings and landscape features. They shape our sense of place and identity. If carved, this adds further dimensions and depth to that appreciation and can tell us much more about past peoples, their identities, beliefs, tastes, technologies and lives. And we are fortunate—carved stone monuments are all around us: prehistoric rock art, Roman, early medieval, later medieval and architectural sculpture, gravestones, and public monuments. This Framework aims to link, inspire, mobilize and direct the efforts of anyone with an interest in carved stone monuments in Scotland. It is driven by a desire for a more strategic approach to the opportunities and challenges carved stone monuments present. Despite including some of Scotland's most iconic monuments and most significant contributions to European art and culture, the significance of this resource is often not fully recognized, nor is the seriousness of the threats to it.

Background

The Framework is part of the Scottish Archaeology Research Framework (ScARF) and its production was led by Dr Sally Foster (University of Stirling) and Dr Katherine Forsyth (University of Glasgow), with co-authors Dr Susan Buckham (University of Stirling) and Dr Stuart Jeffrey (Glasgow School of Art). Funding came from the RSE and from HES via the NCCSS. A key source for the Framework were three workshops, each summarized here, which took stock of existing and ongoing research activities to identify priorities for future research, with a particular focus on digital recording technology and carved stones associated with churches. In addition, many contributors have subsequently supplied invaluable ideas, advice and text, including case studies of their own work.

Structure

After an Introduction, the Current State of Knowledge is critically assessed for the categories of carved stones listed above, and also for heritage and conservation in relation to carved stone monuments. Thereafter the Framework is structured around heritage practices and strategies published by the government: Creating Knowledge and Understanding, Understanding Value, Securing for the Future, and Engaging and Experiencing. An extensive Bibliography of published work and resources is provided. Carved stones are in many ways a touchstone for wider attitudes to the historic environment and to heritage practices because they cross so many boundaries and therefore expose so many issues. They invite, indeed demand, interdisciplinary and cross-cutting approaches. The Framework's structure is designed to draw out a holistic understanding of the value and significance of Scotland's carved stone heritage in the 21st century, and reflect on what this knowledge then offers us. This emphasis on value provides the best hope of making a difference. To this end the Framework identifies research principles, problems, practices, and ideas for projects, some enhancing existing initiatives and others suggesting new directions. Materiality, cultural biography and landscape recur as particularly helpful lenses for exploring carved stones and their context.

The Future

With its wiki-format, users can continue to breathe life into this Framework so that it continues to reflect current practice and research priorities as they inevitably develop over time. This is just the beginning of a process of broadening engagement. Ongoing communication and capacity building is crucial. There is much existing data, research, knowledge, experience and enthusiasm across the many existing communities of interest that can be readily brought together and utilized. But new directions and more significant investments of effort in particular areas are also needed.

ACKNOWLEDGMENTS

This project received an award of £10,000 from the Royal Society of Edinburgh for Arts and Humanities Workshops in 2015 (Principal Investigator Dr Sally Foster, Centre for Environment, Heritage and Policy, University of Stirling; Co-Investigator Dr Katherine Forsyth, University of Glasgow). Historic Environment Scotland provided a grant of £2494 to the National Committee on Carved Stones in Scotland (NCCSS: www.carvedstones.scot) that enabled Workshop 3 to be offered free to all interested parties.

The RSE grant provided travel bursaries for five research students (from Manchester to the Orkney Islands) to attend Workshop 3. It also enabled a keynote public lecture by Dr Katherine Forsyth as part of the Runes, Monuments and Memorial Carvings (RMMC: <http://monumentsnetwork.org/>) international network's meeting in Glasgow on 13 April 2015.

SMF and KF are grateful to Dr Susan Buckham (Kirkyard Consulting/University of Stirling) and Dr Stuart Jeffrey (Glasgow School of Art Digital Design Studio) for teaming up as such very committed and engaged co-authors. We are particularly grateful to Mark Hall (past Chair of NCCSS) and Professor Siân Jones for their

behind-the-scenes input, and to partners and children for their considerable support. Our colleagues on the NCCSS, of which the PI and CI are current and past Chairs respectively, provided the source of inspiration for this event, guided and assisted with its activities. The Society of Antiquaries of Scotland steered us expertly and enthusiastically—Emma Jane O’Riordan of ScARF carried out the production of the website, and Dr Jeff Sanders promoted the project as part of Dig It! 2015. Helen Young provided administrative support for Workshop 3; Stephanie Garrison undertook the evaluation in 8.4. None of this would have been possible without the keen input of those who attended Workshops 1–3 (named in Sections 8.1–8.3) and those who generously acted as Critical Friends (named on title page) by commenting in writing on the developing Framework and providing case studies. Critical Friends do not necessarily share the approach of the lead authors or agree with all the content. We also thank those who kindly provided and allowed us to use their images (see credits in captions).

We will be pleased to correct any errors: please email carvedstones@stir.ac.uk.

‘The news you bring me has been news forever,
So that I understand what a stone would say
If only a stone could speak ...’

from ‘True Ways of Knowing’, 1965
Norman MacCaig

1

1. INTRODUCTION

1.1 Project background and aims

The aim of this Framework is to link, inspire, mobilize and help direct the efforts of anyone with an interest in or responsibility for carved stones in Scotland. It is a venture that involves not only the academic community and the fragmented heritage and stewardship sectors, but also individuals and communities across Scotland and beyond.

It is driven by a desire for a more strategic approach to the opportunities and challenges presented by Scotland’s carved stones: its prehistoric rock art, Roman, early medieval, later medieval and post-Reformation sculpture, architectural sculpture, architectural fragments and gravestones and memorials, and its public monuments. Despite including some of Scotland’s most characteristic monuments and some of its most significant contributions to European art and culture, the significance of this resource is often not fully recognized, as is the seriousness of the threats to it, such as weathering and vandalism. To address this, Sally Foster and Katherine Forsyth, with the support of the NCCSS, set up the Future Thinking on Carved Stones in Scotland project (Figure 1).

The NCCSS takes the view that addressing the underlying causes of these problems requires targeted research into what carved stones can tell us about both the past (their historical context) and the present (social value, national and community identity). Research is needed also into curatorial issues, including the identification

of best practice: for example, auditing and monitoring the resource, techniques of conservation and management, display and interpretation, and the role of new technologies in all of these.

The heart of the Future Thinking on Carved Stones in Scotland project was a series of workshops to take stock of existing and ongoing research and to identify priorities for future research. Priority was given to two specific areas that seemed particularly pressing or potentially fruitful. First, digital recording technology, a field in which Scotland aspires to play a leading role but the emphasis to date has been on data capture rather than research. Second, carved stones associated with churches, where so many are inevitably found. This is because changes in the role of churches within local communities, specifically accelerating redundancy and changes of ownership, present particular threats to carved stones, while increasing use of heritage as a means of community regeneration offers welcome opportunities.

Workshop 1 Digital recording of carved stones for research: where are we and where can we go? (Glasgow School of Art Digital Design Studio, 12 February 2015, invitees from England, Ireland, Scotland and Sweden). This focused on the corpus of carved stones produced in north-western Europe between AD 400 and 1200, but had implications for digital recording of carved stones of all periods. See section 8.1

Workshop 2 At the door of the church? Research and carved stones at ecclesiastical sites (Govan Old Church,



Figure 1: The banner of the Future Thinking on Carved Stones in Scotland project. © Sally Foster

1 May 2015, invitees only, from Scotland). See Section 8.2

Workshop 3 Future thinking on carved stones in Scotland (Royal Society of Edinburgh, 26 August 2015, open to all, attendees coming from England, the Isle of Man, Scotland and Wales). See Section 8.3

Workshop 4 Future Thinking: ScARF for Carved Stones in Scotland (University of Stirling, 28 October 2015, authors and ScARF team).

The Future of Carved Stones in Scotland project website reflects efforts made to communicate and involve people unable to attend the workshops. For feedback on these see Section 8.4.

1.2 Definition of terms

1.2.1 Carved stone

This Framework is concerned with ‘carved stone monuments’ which we interpret in a broad and inclusive manner, aware that the boundaries of this category are indistinct. The ‘stone’ element of this definition is straightforward, making due allowance for the fact that stone monuments may incorporate elements in other materials, e.g. metal or glass. While issues raised within the Framework may be relevant to cognate monuments made from other materials, such as ceramic, metal or wood, these are excluded from direct consideration. By ‘carving’ we understand the use of tools to remove part of the stone surface, using any of a range of techniques, including pecking, grinding, gouging, cutting, chiseling, scratching and polishing. The stones in question may thus be incised, carved in various degrees of relief, or in the round. The level of technical skill and artistic ambition exhibited ranges greatly. At one end of the spectrum are highly accomplished public artworks created by teams of professional sculptors, at the other extreme are informal carvings, scratch art, and graffiti created by ordinary people, including children, for perhaps little more than personal enjoyment.

We use the term ‘monument’ somewhat loosely to convey the principle that the item should be or have been earthfast or otherwise tied to a specific location. We therefore embrace what Baldwin Brown (1905, 22) referred to as ‘immovables by nature’ (things that cannot normally be moved) and ‘immovables by destination’ (things that can technically be moved but were not normally designed to be removed, such as gravestones). By ‘monuments’ we do not mean only free-standing stones, but include carvings in outcrops of

living rock or on cave walls. It is this physical connection to a specific place which allows us to discriminate between ‘monuments’ and stone ‘artefacts’ which were never intended to stand in or on the ground (we use ‘artefacts’ here in the technical curatorial sense of a portable item; of course, all human-made or altered materials can otherwise be described as ‘artefacts’). While the materiality of stone artefacts means some of the issues raised in the Framework may also be of relevance to them, nonetheless we view them as fundamentally different in nature. By this means we exclude from direct consideration small portable objects such as Neolithic carved stone balls or portable stone altars, although clearly much is to be learned from work on such objects (Imaging techniques: [Case Study 7](#)).

Note that mere portability is not grounds for excluding an item. On the contrary, many of the items considered within this Framework have been removed from their ancient location and/or have become fragmented such that they are now ‘portable’ and thus rendered uniquely vulnerable (see Section 5.3.3). Others are small enough that they have always been potentially portable. The difference is that at one time they were earthfast or otherwise tied to a specific location (‘immovables by destination’). We have chosen to exclude buildings *per se* but to include architectural carvings, whether *in* or *ex situ*, aware that these sit on a continuum of relevancy to the bulk of the material under consideration.

Although they do not fall strictly within the above definition, we are conscious that certain other categories



Figure 2: Carved stones formed a significant component of the first monuments to be protected under British ancient monuments legislation in the late 19th century, such as the so-called Drosten Stone from St Vigean. © Society of Antiquaries of Scotland

of stones which stand at one remove nonetheless share characteristics with carved stone monuments proper, and in some circumstances are profitably considered alongside them. Examples would be unworked stones erected as monuments, e.g. prehistoric standing stones; ‘significant’ stones, whether worked or natural, which are endowed with special meanings by being named or memorialized through stories; and also uncarved stones to which colour has been applied (a separate issue from the painting of carved stones). While we would not include these under the label ‘carved stones’ they are nonetheless to be borne in mind as kindred monuments with bearing on many of the issues discussed in this document.

Our definition of carved stones in Scotland thus encompasses but is not limited to: prehistoric carvings in living rock and on monuments; Roman altars, dedication slabs and statuary; early Christian cross-marked stones, Pictish symbol-stones, cross-slabs and free-standing crosses; gravestones, tomb sculpture and burial monuments of all periods; medieval and modern architectural sculpture including sundials and fountains; public monuments such as war memorials and modern carved sculpture. For illustrated examples, see the NCCSS website.

1.3 Why focus on carved stones?

Our appreciation of the past relies heavily on the survival of stone monuments, buildings and landscape features. They shape our sense of place and identity. If carved, this adds further dimensions and depth to that appreciation and can tell us much more about past peoples, their identities, beliefs, tastes, technologies and lives (Figure 2). And we are fortunate—carved stones of some description or other are all around us. It is telling of their overall significance that Scotland

is the only country to have produced its own national policy for carved stones (Historic Scotland 1994; Scottish Executive 2005; Figure 3).

So what does a research focus on carved stones in particular offer? Why not aim for closer integration and expansion within the context of existing period-based and other ScARF themes, not least given the risk that carved stones are considered out of context?



Figure 3: Scotland published the first national government policy and associated guidance for carved stones in 2005. Crown Copyright: Historic Environment Scotland

Naturally we hope that the ideas expressed here will work their way back into these other ScARF reports, and be developed further. However, the near invisibility in the existing ScARF reports of carved stones and the lack of application of carved stone data within wider analysis suggests that there is a lack of awareness of the questions that can be asked of this material. Is this because of the lack of data sets, or access to them, or because of a failure to recognize research potential?

Regardless, there are considerable advantages to working across periods, across the traditional disciplinary, institutional, and other barriers to open and joined-up thinking that result in narrowly defined mentalities and practices. Indeed, carved stones are the means *par excellence* of doing so. In many ways they are a touchstone for wider attitudes to the historic environment and to heritage practices because they cross so many boundaries and therefore expose so many issues. They invite, indeed demand, interdisciplinary and cross-cutting approaches. There is a merit to looking outside of what we are familiar with to identify new methods and questions. Those working on gravestones can learn from those working on prehistoric rock carvings, and vice versa. The opportunities for cross-fertilization are not just theoretical but also technical and practical. Issues such as erosion and how to best conserve and present carved stones, or how to record them, are hardly period-specific. That is not to say that different types of carvings do not have some particular problems (see Section 5.3).

Some of our subjects have the capacity to become portable, hence move from being monuments, or parts of monuments, to artefacts. This means that carved stones often transgress traditional curatorial lines. They are also prone to ‘fall through the gaps’ between institutional responsibilities (Foster 2010a). This is one of the reasons that the NCCSS was founded in 1993 as an independent forum for exchange of information. This was the idea of David Breeze, Richard Fawcett arranged for John Higgitt to be the first Chair, and between them they set up the Committee. It aims to enable a better understanding of the issues affecting carved stones and to facilitate collective efforts by Scottish national bodies to address them.

Carved stones and their preservation fascinated early Scottish antiquarians (Figure 4; Henderson 1993a) and the concept of carved stones has a heritage pedigree. There is not the sort of public recognition that other categories of monuments attain, but there is public interest in its constituent elements, notably prehistoric art, early medieval sculpture and gravestones.



Figure 4: Antiquarians examine the inscription on the Catstane in 1849.
Crown Copyright: Historic Environment Scotland

In comparison to existing ScARF, an overarching approach to carved stones offers the scope for a new way of thinking because there is no established frame of reference. (See [Case Study 1: Making a difference](#))

1.4 Framework Strategy

1.4.1 Approach

While it would have been possible to produce a Framework that adopted a chronological outline, we have instead aligned our thinking with heritage practices and strategies published by the government. Our four themes are:

- Creating Knowledge and Understanding (see Section 3)
- Understanding Value (see Section 4)
- Securing for the Future (see Section 5)
- Engaging and Experiencing (see Section 6).

In addition to the four themes above, cross-cutting themes include ‘materiality’, ‘biography’, context/landscape and the application of digital and scientific technologies.

We had looked to *Our Place in Time: The Historic Environment Strategy for Scotland (OPIT)*, published by the Scottish Government (SG) in 2014, but found we needed to draw a critical distinction between understanding value (the ways in which something is meaningful and relevant to society) and engaging and experiencing (the mechanisms to create social benefits by promoting appreciation of values and of significance—the access, interpretation, learning and tourism that *OPIT* places in its Value section). Hence, our introduction of Understanding Value, a fourth aim/priority to the three it identifies. Our different use of the term value reflects longstanding international conservation heritage practice (de la

Torre 2002; Australia ICOMOS *Burra Charter*, 2013). A clear application of this is English Heritage (EH)’s 2008 *Conservation Principles* for sustainable management of change in the historic environment. While recognizing that the aims and target audience of *OPIT* are broader than the historic environment and its managers, it helps more generally to distinguish between values and instrumental benefits (e.g. Clark 2010).

The rationale for our approach is that we believe it offers the best hope of making a difference. This is because it will enable a more mainstream audience to be able to relate to and apply our observations, even if much of our detail is about academic research. This is also an approach that celebrates and embraces the cross-cutting nature of carved stones and avoids narrow and blinkered thinking in ‘silos’, but equally wants tempering by remembering the links to other media and visual culture (see e.g. Henderson and Henderson 2004; Insh 2014). The drawback of a specifically ‘carved stones’ focus is that carved stones risk being considered outside of other aspects of their contexts (although this is hardly our intention). Along the way we have identified a large number of systemic issues that are barriers to research on carved stones, although many are not unique to carved stones.

Since many of us do want and need to focus on a particular period or theme, and historically speaking this is a more familiar approach to carved stones, we have provided period-based and thematic historiographies (Section 2). In adopting our thematic approach we have needed to explain where we are coming from and there is some unavoidable overlap in content, particularly between these historiographies and the thematic approaches.

Our intention has been to provide a series of lenses through which to consider the carved stone resource. To improve its accessibility, we have organized the Framework into sections which readers can dip into as they please, although the best understanding of our approach and its application will derive from reading the sections sequentially. We have also assembled from a diverse range of authors a rich body of Case Studies which highlight recent and current work on carved stones and, we hope, demonstrate in greater depth the issues raised in the main text.

1.4.2 Understanding value

Figure 5 is a graphic representation of the differences between the conservation management cycle, its equivalence in interpretation, and the three stated aims of *OPIT*, to help explain the difference between

our Framework structure and *OPIT*. The heritage conservation cycle at the heart of this diagram is something that heritage managers aim to deliver: understanding that leads to valuing, valuing that leads to caring for something, caring that leads to enjoyment, which in turn feeds back into a desire to know more (Thurley 2005). In practice and in a wider sense, the relationship between knowledge and values, in particular, is cyclical not linear: what we value informs what we seek to understand and how we aim to do this, while our understanding shapes some but not all of our values (at least in relation to historic and scientific values). This applies to everyone, not just the people with academic knowledge or those who work in heritage management.

In giving Understanding Value its due place in our Framework structure we will make it easier to achieve the overall ambitions of *OPIT*. Understanding value

and significance (the sum of values) is what makes informed-decision making work. If we understand the different values that different communities of interest may have, we can see where they do or could intersect, and identify common purposes.

Overall, our vision is that research on our core themes of understanding, valuing, caring and engaging will function together to provide an ongoing and deepening cycle of making a difference (having an impact /bringing benefits), and as such will aid future researchers as well as those to whom they apply for funds. In Looking Forward (Section 7), we will consider what success might look like. This is only the beginning of a process. The wiki format of ScARF will permit our readers to add to what is suggested here, with further thought and time.

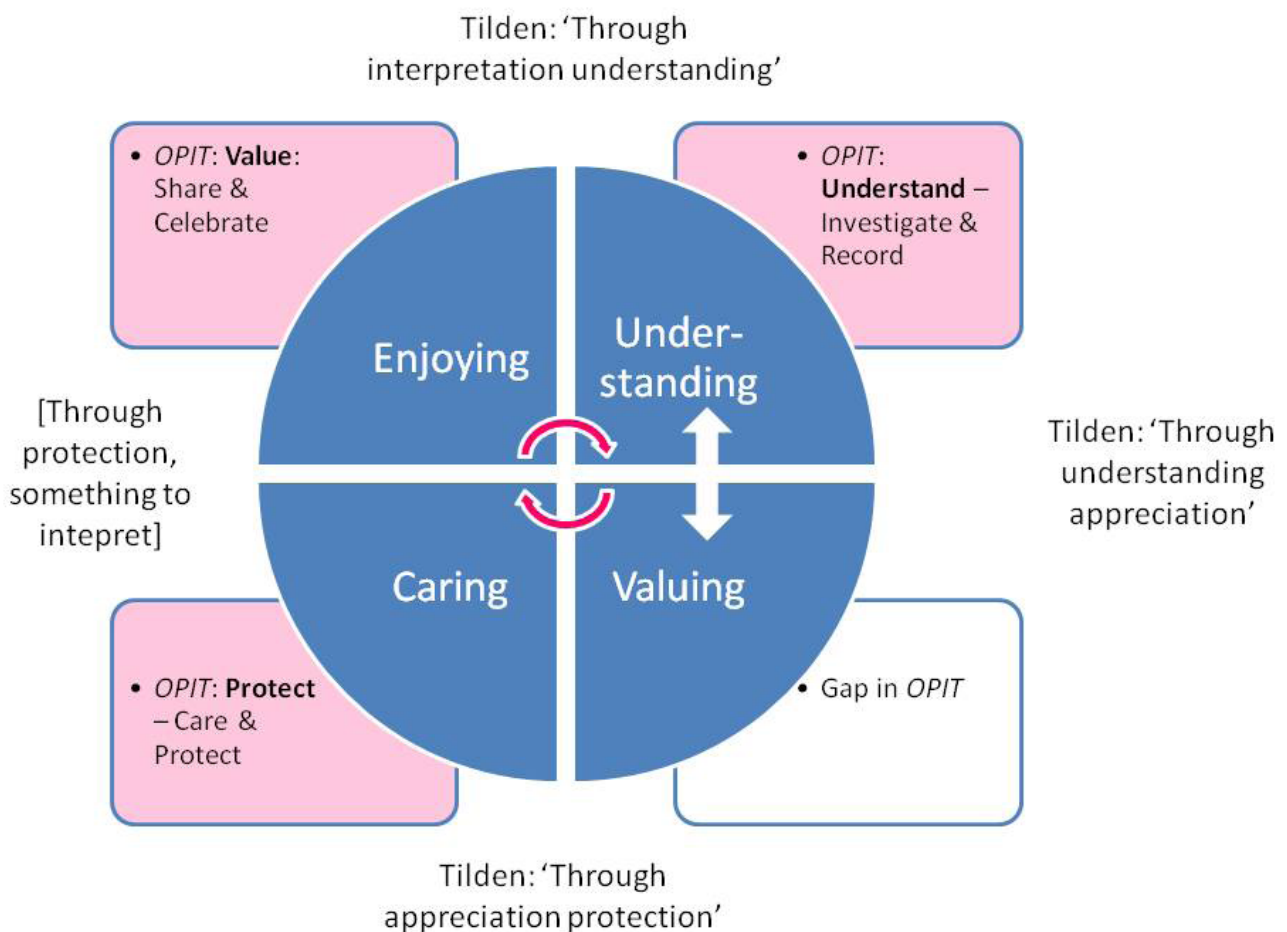


Figure 5: A visual comparison of the aims of the *OPIT* strategy (Scottish Government 2014) in relation to the heritage conservation cycle (Thurley 2005) and interpretation practices (Tilden 1957). The cyclical relationship between understanding and certain types of values must also be considered. © Sally Foster

2. CURRENT STATE OF KNOWLEDGE

Our current understandings of carved stones are predominantly structured by chronological and curatorial-based perspectives, but there is no single or standardized way of categorizing them. The historiographies below and sources in Section 10 adopt the carved stone groupings used by the NCCSS and others to discuss and frame their work (e.g. Scottish Executive 2005). However, we found as we ‘tested’ these through reading, researching and writing that we needed to refine and qualify them for the purposes of this exercise, to provide greater clarity and minimize chronological overlap. Our headings are therefore prehistoric rock art, Roman, early medieval, later medieval, architectural sculpture, gravestones, public monuments, and heritage and conservation. It will be apparent that carved stones are so diverse that it is challenging to cover all types, and relevant research literature, particularly from later periods, is inevitably (and rightly) very diffuse. This makes it particularly challenging to draw together from the starting point of carved stones. However, we have begun here a process that we hope will invite future improvements and developments.



Figure 6: Prehistoric rock art at Auchentorlie, West Dunbartonshire. In Scotland the rock-art tradition is particularly strong in Argyll and Bute, Dumfries and Galloway, Highland Perthshire and around the Moray Firth where abstract designs, usually shallow pecked circles or cups, sometimes surrounded by rings (‘cup-and-ring marks’) or connected by grooves are the norm. Similar designs are also found in England, Ireland, Wales, Brittany and north-west Spain, and in other parts of the world.
Crown Copyright: Historic Environment Scotland

2.1 Prehistoric rock art

Rock art is a term used to describe motifs that were carved mostly onto earthfast rocks or boulders but also monuments, mainly in the later Neolithic and Early Bronze Age (about 4,900 to 4,000 years ago) (Figures 6–8). Around 2500 carved rocks are currently known in Scotland, although many new discoveries are made every year.



Figure 7: Elaborate so-called ‘passage-grave art’, distinctive designs found along the Atlantic seaboard, was carved onto stones at prominent places in burial monuments, particularly in Orkney. Very occasionally, as here at Ri Cruin, Argyll and Bute, representations of copper flat axes were also made on burial monuments, sometimes superimposed over cup-marks.
Crown Copyright: Historic Environment Scotland

Good histories of rock-art studies in Scotland exist (notably Bradley 1997a; Beckensall 1999; A Jones *et al.* 2011), and there is one short overview of Scottish research in relation to heritage and conservation (Foster 2010b, 6). ‘One of the enigmas of archaeology’ (Anderson 1883, 299), the earliest significant discovery of rock art in Scotland was only reported in 1830 (Currie 1830). The first serious antiquarian overviews appeared in the later 19th century (Simpson 1866; Allen 1882) but the path to evidence-based and theoretically informed understanding has been slow. From the 1960s to 1990s discovery, reporting and analysis was largely the preserve of avocational archaeologists. Local groups and individuals made an immense contribution to our knowledge of rock art but mainly focused on identifying and recording motif typology, a phenomenon not limited to Scotland (Nash and Chippindale 2002, 3). Fortunately, there is a worldwide literature on all aspects of rock-art research that invites reflection on Scottish understanding and approaches (e.g. Bradley 1997a; Nash and Chippindale 2002; Bertilsson and McDermott 2004; Bradley 2009; Barnett and Sharpe 2010; Darvill and Fernandes 2014a).

Recording improved with the RCAHMS’ survey of the rock art in Argyll (RCAHMS 1988), although many new discoveries have since been made in the Kilmartin area. Important RCAHMS survey work in the Loch Tay



Figure 8: Some designs—possibly no more than scratches—were found recently during excavations of Neolithic houses at Ness of Brodgar, Orkney Islands. © Antonia Thomas

area is as yet unpublished. Meanwhile, community-led initiatives, such as the Ross-shire Rock Art Project per North of Scotland Archaeological Society have recorded extensive rock art in areas where little was known previously. Recording methods have evolved in tandem with digital technologies, but digital applications are so far limited (exceptions including Cochno and Ormaig—see Condition monitoring at Ormaig: Case Study 37). So-called scratch art or graffiti is a relatively recently recognised form of engraving now generating research literature. In particular, this has been identified in prehistoric buildings in Orkney (Figure 8), where it was also sometimes painted (A Thomas 2015). That stones might be decorated just by application of colour rather than any form of carving is a consideration in this and later periods.

Arguably prehistoric rock art does not play a role in defining present local identity and sense of place because it tends not to be associated with modern settlements, and it has low public awareness. Kilmartin Glen and its museum is the obvious exception. This is as yet little researched, although the recent ACCORD project (Jeffrey *et al.* 2015) demonstrates the potential contemporary social value of rock art. Another aspect of its social value that has not been researched is the way in which rock art has proved such a fertile ground for lots of fringe thinking about its meanings and origins. Past biographical dimensions of rock art have been recognised, and may prove to be a rewarding avenue for future research (Hingley *et al.* 1997; A Jones *et al.* 2011).

In line with practice elsewhere, archaeologists have begun to explore the immediate archaeological context of rock art (Bradley *et al.* 2012), finding dating evidence, associated structures and artefacts. *An Animate Landscape. Rock Art and the Prehistory of Kilmartin* (A Jones *et al.* 2011) is an example of what can be achieved through interdisciplinary research, modern

archaeological perspectives and creative publication (although it offers a cautionary tale to involve soil scientists early in excavations: Foster 2013b).

The work of Andy Jones and Bradley, in particular, suggests that rock art was an important means by which prehistoric people made sense of their surroundings, so recording and understanding its landscape context is critical. Research into how to translate this into heritage practices, such as protection and interpretation of setting, is virtually non-existent, although the landscape has been opened up around some afforested sites (Ormaig: Figure 6; Condition monitoring at Ormaig: Case Study 37; Achnabreck), and we anyway know little about what the earlier landscapes looked like.

Rock-art research in Britain has mainly focused on a few areas with high concentrations of engravings, while studies at an inter-regional scale have been limited (e.g. Van Hoek 1997). This has created a fragmented and distorted overview in which the carvings are presented as disparate ‘clusters’ within a single, unified tradition, obscuring more subtle regional patterns and potential connections between geographical areas and prehistoric communities. British rock art is not uniform, however. There is considerable diversity within and between regions, yet we have no clear understanding of the common themes that bound all rock-art users, or how and why these varied regionally.

Research into the specific conservation needs of carved rocks (sometimes vertical faces) is negligible. Specialists are learning much through individual casework (such as the early medieval rock art at Dunadd), but research of this nature is rarely being drawn together into peer-reviewed publications where the outcomes can be shared. This contrasts, in particular, with experiences in Scandinavia (Hygen and Bengtsson 2000; Bjelland and Hellberg 2005; Hygen 2006; Gustafsson and Karlsson 2014) and England (ERA: England’s Rock Art) where national initiatives assessed the conservation needs of the resource, identified priorities for action, and researched the appropriate conservation science and presentation methods. In England, involvement of local communities has raised awareness and encouraged sustainability (Rock-art recording: Case Study 29). This approach has proved successful on a smaller scale in Scotland (e.g. Kilmartin Museum activities; ACCORD project—Jeffrey *et al.* 2015; Cochno). Ethical issues have also been considered elsewhere (e.g. Walderhaug Saetersdal 2000).

For further reading, see Section 10.1.



Figure 9: Antonine Wall distance slab from Hutcheson Hill, Bearsden (RIB 2198), commemorates work on a 3000ft section by the Twentieth Legion in AD 142–3. Discovered in 1865 it was taken to North America in 1871 where it was destroyed by fire. It is known only from this plaster cast. H. 0.67m. Hunterian Museum. © Sally Foster

2.2 Roman

Roman military intervention in Scotland has left behind a rich legacy of carved stone monuments dating from the late 1st to the early 3rd centuries AD (Keppie 1998a). The majority are formal, inscribed public monuments, made by and for non-local military personnel, or civilians operating within a military milieu. These include: stone altars (erected in fulfilment of a vow to native and non-native deities), tombstones, milestones, dedications to the Emperor, architectural pieces, and the distance slabs (of which 19 survive) carved to commemorate the completion of different sections of the Antonine Wall by various legions in AD 142–3 (Keppie 1998b; Breeze 2006). In form and decoration, most of these monuments are of a type familiar from elsewhere in the Empire, however, the Antonine Wall distance slabs are unique—nothing similar has been found on any other frontiers of the Roman Empire (Keppie 1979).

Inscriptions—in Latin and often highly abbreviated—dominate most of these monuments, and their testimony has been crucial to efforts to understand the military and religious history of the Romans in Scotland. Not all monuments are inscribed and, even those which are, frequently also feature a range of decorative motifs and classical imagery designed to convey statements about military might and religious piety. The finest are indeed splendid monuments, elaborately decorated and exhibiting very high levels of workmanship. The corpus also encompasses much humbler material, of cruder (presumably non-professional) quality. These include informal doodles and scratched inscriptions, for instance those recording work done or loads delivered on building blocks from Easter Langlee, Roxburghshire.

Scholarly interest in Scotland's Roman period carved stones dates back at least to the late 17th century, when the University of Glasgow invited landowners (many of whom were alumni) to donate Roman stones in their possession. These gifts formed the nucleus of the significant collection of Roman sculpture, particularly from the Antonine Wall, housed in the University's Hunterian Museum (Keppie 1979; 2014a) (Figure 9). Although some Roman altars are still landscape features, and a few remain in private hands, the great majority of Roman carved stones are in museums. In addition to the substantial collection in the NMS, there are a number of pieces in museums in Dumfries, Dundee, Perth, Melrose and Falkirk.

Sculpture, especially inscribed sculpture, is fully integrated into wider studies of the Romans in Scotland and has often played a crucial role (as the Antonine Wall slabs did in piecing together the making of the Wall). Usually, however, Roman carved stones have been employed to answer questions arising in other fields rather than be a focus of research, generating new questions, in their own right. The predominant approaches are iconographical and epigraphical. Accounts of individual inscriptions have typically been published in specialist journals but an overview of the Scottish material is most easily gained from the standard corpora: the total of 125 inscriptions then known from Scotland were included in Collingwood and Wright's definitive corpus of *Roman Inscriptions of Britain* (1965), updated by Keppie (1983) to include a further 19 found between 1954 and 1983. Approximately half the total of inscribed stones are also sculptured, i.e. bear figural or abstract decoration, and these, together with a further 100 or so uninscribed sculptured stones



Figure 10: Cramond lioness. Roman funerary monument in the form of a tomb guardian lioness. Local features include the savage jaws of the creature and the fact that its prey is a captive male barbarian. Found in the vicinity of the Roman fort of Cramond, it is presumed to have marked the grave of an important dignitary stationed there. Late 2nd/early 3rd century AD. Now in the NMS. L 1.51m.

© Trustees of the National Museums of Scotland

(including architectural fragments) were published by Keppie and Arnold (1984) as fascicle 1.4 of the *Corpus Signorum Imperii Romani (Corpus of Sculpture of the Roman World): Great Britain*.

Since the publication of these corpora, new finds have continued to be made and are typically reported in the journal *Britannia*. Notable discoveries include the two highly accomplished altars discovered in 2011 during grave-digging in a cemetery that lies within the site of the Roman auxiliary fort at Inveresk, near Musselburgh. Surely the most spectacular recent find is the so-called ‘Cramond lioness’, a monolithic ‘tomb guardian’ found in silt at the mouth of the river Almond (Midlothian) in 1997 (Figure 10). It is a local variant of a typical Roman form but differs in depicting a bound male prisoner being devoured by a lioness. It dates to the late 2nd or early 3rd century AD and would have served as part of the tomb of a Roman military commander or dignitary, connected to the nearby Cramond Roman fort.

Monuments such as these provide firm evidence for the occupying forces of an imperial power—there is no evidence that stone carving was adopted by the local population, even though many of these monuments would have been visible to them in the landscape. Not until the 5th century does stone carving become established in Scotland. The earliest post-Roman carved stone monument from Scotland—the 5th-century Christian inscribed pillar from Whithorn, Galloway—is a product of a continuing Roman tradition lingering on in the zone around the Hadrian’s Wall frontier (reflected in aspects of its lettering, spelling and layout: Forsyth 2009).

For further reading, see Section 10.2.

2.3 Early medieval

2.3.1 The material

Nearly 2000 carved stone monuments survive from early medieval Scotland (AD 500–1100). These range from unworked boulders incised with simple crosses to magnificent free-standing crosses and cross-slabs up to three metres or more in height, such as those from Iona (Figure 11), Ruthwell (Figure 12) and Aberlemno (Figure 13). The finest, such as the Nigg cross-slab, rank among Scotland’s greatest artworks (see Figure 24; Metric Drawing: Case Study 31). These incised and sculptured stones are decorated in regional versions of the ‘Insular’ art style common to all the peoples of Britain and Ireland, both Anglo-Saxon and Celtic-speaking. Rich in Christian symbolism, this art combines intricate geometric ornament (interlace knotwork, spirals, key-patterns) with figurative scenes depicting Christian imagery and details of everyday



Figure 11: The St Martin’s Cross, Iona, during RCAHMS recording in 1972/3. Crown Copyright: Historic Environment Scotland



Figure 12: 1832 drawing of the Ruthwell Cross by Rev Dr Duncan, engraved by W Penny. Crown Copyright: Historic Environment Scotland

life, including dress, transport and weaponry (Figure 14; musicians in Canmore upgrade example: Case Study 4).

The range of functions of these monuments is wide: some marked significant points in the landscape



Figure 13: The back face of the Aberlemno roadside cross-slab, including hunting scene. Crown Copyright: Historic Environment Scotland



Figure 14: The battle scene on the back of cross-slab in Aberlemno kirkyard, Angus. Crown Copyright: Historic Environment Scotland

(boundaries, routeways, ancestral burial grounds), many stood outside at churches or monasteries as a powerful testament to Christian belief and patronage. Some, whether upright or recumbent, marked the graves of prominent people (Figure 15); a smaller number are architectural features, the sole remnants of exceptional churches (Figure 16). Although the great majority of stone monuments were not inscribed, a number bear short inscriptions: in Latin (the language of the Church) or in Gaelic, Pictish, Old English or Norse; using the Roman alphabet (Figure 17), ogham (Figure 18) or runes (Figure 19). Unique to Scotland is an enigmatic system of graphic motifs known as ‘Pictish symbols’ found on over 250 stones, both unworked pillar-stones and elaborate cross-slabs (e.g. Figures 13, 14, 18, 20). The set of Pictish symbols comprises about three dozen designs. A small proportion of these are recognizable objects and native creatures but most are abstract geometric motifs, the meaning of which remains a mystery.

2.3.2 Scholarship before the 1990s

The scholarly recording of Scotland’s sculpture was put on a firm footing in the mid-19th century (Stuart 1856) but reached its early apogee with Allen and Anderson’s *Early Christian Monuments of Scotland* (ECMS: Allen and Anderson 1903), the ‘bible’ of early medieval sculpture studies in Scotland throughout the 20th century (see J N G Ritchie 1997; 1998; Henderson 1993a). Subsequently, early medieval carved stones were included in the various county Inventories produced by the RCAHMS throughout the 20th century, culminating in the volumes on Iona (RCAHMS 1982) and South-East Perth (RCAHMS 1994a). Individual new finds were published in a various articles in the *Proceedings of the Society of Antiquaries of Scotland*, which also carried occasional studies of aspects of early medieval sculpture studies (e.g. Curle 1940; 1962; Gordon 1956; Lang 1972). Scholarly analysis of early medieval sculpture in Scotland was dominated by a small number of scholars, including Curle (née Mowbray) (Curle 1940; 1962; Mowbray 1936), Stevenson (1955; 1959; 1971; 1981b), Thomas (1961; 1963; 1967; 1971; 1973; 1992) and Henderson (1958; 1967; 1971; 1978; 1982; 1983; 1986; 1987b) (see Nicoll 1995 for detailed bibliographies covering the period up till the mid 1990s).

In 1985, the 1300th anniversary of the Battle of Nechtanesmere galvanized both scholarly and popular interest in the Picts (and focused attention on the Aberlemno kirkyard stone—Figure 14— which was thought, probably erroneously, to depict the battle).



Figure 15: Meigle Museum in 1953, with a series of Pictish recumbent monuments in front of the cross-slabs.
Crown Copyright: Historic Environment Scotland



Figure 16: Slab from Papil, Shetland, interpreted as part of a composite, box-like shrine or other architectural feature.
Crown Copyright: Historic Environment Scotland



Figure 17: Face b of the stone from Lochgoilhead, Argyll and Bute, that bears an inscribed alphabet in roman script and, on another face, a short ogham inscription. Crown Copyright: Historic Environment Scotland

Renewed scholarly interest was reflected in the first interdisciplinary conference on the Picts since the 1953 gathering, ‘The Problem of the Picts’ (Wainwright 1955), the proceedings of which included important papers about Pictish sculpture (Small 1987). Increasing popular interest led to the foundation in 1988 of the Pictish Arts Society (PAS). PAS membership includes professional scholars and the general public, and through its lecture series, annual conference and occasional publications (including Nicoll 1995) has done much to stimulate interest in and care for the sculpture of the Picts, and early medieval Scotland more generally. Wider recognition of the work done in the 1970s, 80s and 90s in the recording and study of Scotland’s early medieval carved stones, was expressed in the following decades through the award of a number of honours. These reflected not only the personal endeavor and achievements of the individuals concerned, but also the worth attached to the resource itself (Anna Ritchie, OBE 1997; Isabel Henderson, OBE 2002; Ian G Scott, MBE 2014; Tom Gray, Honorary Master of the University of Aberdeen 2015).

2.3.3 A new corpus?

Almost a century after it had been first published, the monumental *Early Christian Monuments of Scotland* was reprinted in affordable paperback format by Pinkfoot Press, with an introductory essay by Isabel Henderson (1993a). This initiative provided an important fillip to the study of Scotland’s early medieval carved stones by making the great reference work newly accessible. However, the reprint, valuable though it still was, exposed the extent to which *ECMS* was out of date, both in coverage and in approach. Allen’s efforts to record all of Scotland’s early medieval carved stones were indeed heroic, but *ECMS* did not include everything known in 1903 (for instance, simple cross-marked stones—e.g. Figure 21—are under-represented). There have also been a substantial number of new discoveries in the intervening century, meaning that *ECMS* includes only a little over half of all stones currently known. The three-part classification system adopted by Allen and Anderson was no longer considered useful and indeed, had become a hindrance, focusing overly on the Pictish symbols and insufficiently differentiating the wide range of non-symbol inscribed stones (see Section 3.2.1). The publication in 1984 of the first volume of the British Academy’s *Corpus of Anglo-Saxon Sculpture*, presented a new model for sculpture catalogues that scholars in Scotland were keen to emulate. The NCCSS commissioned a working party of scholars to consult on what a ‘new *ECMS*’ recording all of Scotland’s early medieval carved stones to modern standards should



Figure 18: Reconstructed fragments of the stone from Brandsbutt, Aberdeenshire, with Pictish symbols and ogham script.
Crown Copyright: Historic Environment Scotland

look like and their recommendations were set out in a report submitted in 2005 (EMSSS Working Group 2005). In the following years several collaborative attempts were made to obtain funding for a nationwide recording programme along the recommended lines and incorporating the then newly emerging technique of digital scanning, but these were thwarted by the large scale of the undertaking (Higgitt 2005). More recently, a new benchmark in the recording, presentation and analysis of early medieval sculpture has been set by the three volumes of *A Corpus of Early Inscribed Stones and Stone Sculpture in Wales* (Redknap and Lewis 2007; Edwards 2007; 2013) which have placed greater emphasis on archaeological aspects such as landscape contexts, and monument biography. Both the Anglo-Saxon and the Welsh series have provided a wealth of comparative material for the Scottish stones.

2.3.4 Other recording efforts

A single, unified corpus which covers all early medieval sculpture of Scotland to a consistent standard at least as ambitious as that of the Welsh corpus remains a pressing desiderata. However, opportunistic, uncoordinated efforts to adequately record Scotland's early medieval carved stones have continued apace. Although the programme of RCAHMS county inventories was abandoned, subsequent diverse publications by RCAHMS have prominently featured early medieval stones, e.g. North-East Scotland (RCAHMS 2007a), Canna (RCAHMS 2008a), Angus (RCAHMS 2008b) and Brechin (RCAHMS 2007b). The RCAHMS's recording of early medieval sculpture in the Western Isles and West Highlands was presented as a substantial stand-alone volume (Fisher 2001) which, unlike the others, included sustained analytical discussion of the material. The Canmore database is a major resource (see Section 3.5.4) and there are ongoing efforts to improve its utility to researchers working on early medieval carved stones (Canmore upgrade: Case Study 30; Canmore upgrade example: Case Study 4).

There have been excellent catalogues of regional groupings by independent scholars and academics (Shetland—Scott and Ritchie 2009; Orkney—Scott and Ritchie 2014; Caithness—Blackie and Macaulay 1998; Dumfries and Galloway—Craig, unpublished PhD 1993; Rosemarkie—Henderson 1990; Elgin—Byatt 2008; Fortingall—Robertson 1997). Many of these have featured the interpretative drawings of Ian G Scott (Metric drawing: Case Study 31), or his successor as chief illustrator at RCAHMS, John Borland (Figure 20). Scotland is very fortunate indeed to have such a comprehensive and high-quality set of interpretative

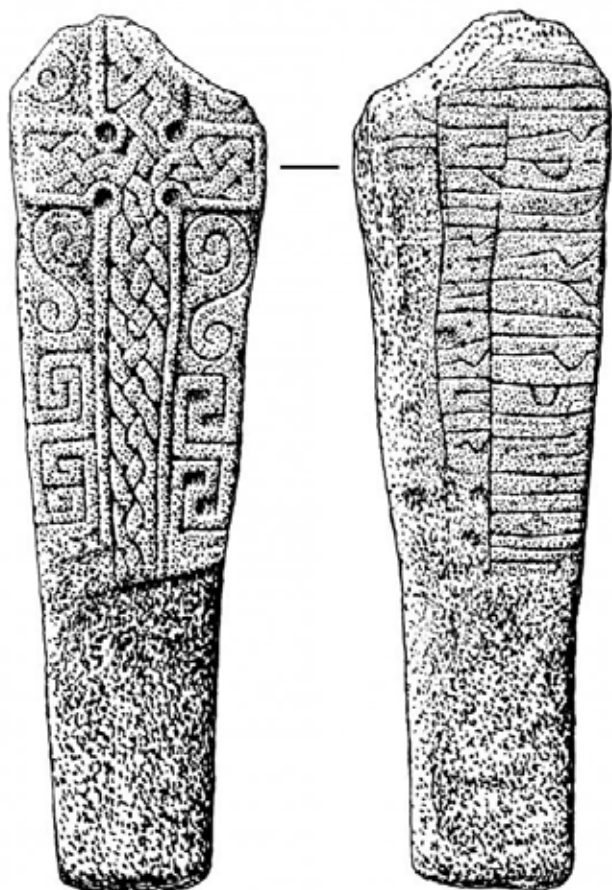


Figure 19: Norse, rune-bearing cross-slab from Cille-Bharra, Barra, in the Western Isles. Crown Copyright: Historic Environment Scotland

drawings of early medieval sculpture. They are a major asset for future research (see Scott 1997 for reflections on drawing this material). Similarly, an extensive and high-quality photographic archive exists thanks to the efforts of RCAHMS photographers (at work in Figure 11) and independent photographer Tom Gray who pioneered techniques of oblique-flash photography for the purpose (Gray and Ferguson 1997). As befitted the research focus of the time, these photographs are typically only of the carved faces of stones. More recent interest in materiality, carving techniques, and monument biography requires greater attention to the less glamorous backs, sides, undersides and broken surfaces which have their own forms of information to yield.



Figure 20: The Pictish cross-slab at Fordoun, being drawn by John Borland of the RCAHMS. *Crown Copyright: Historic Environment Scotland*

Publication of local groupings has followed archaeological excavation at monastic sites, incorporating both new finds and re-examinations of existing material (Inchmarnock—Lowe 2008; Hoddam—Lowe 2006; Tarbat—Carver 2005; Carver *et al.* forthcoming; Forteviot—Hall 2011). A detailed corpus of the large and important collection of sculpture from St Vigeans (Geddes forthcoming) was associated with a major redisplay of the material in the care of Historic Scotland. Academic research was commissioned by Historic Scotland in association with other redisplay



Figure 21: The redisplay of early medieval carved stones at Whithorn, Dumfries and Galloway. © MA Hall



Figure 22: Example of cross-incised stone, in the graveyard at Calgary, Mull. © Sally Foster

projects at Whithorn (Figure 21: Yeoman 2005; Forsyth 2003), Kirkmadrine (Forsyth and Maldonado 2013) and Iona (Forsyth and Maldonado 2012). While some of the research findings have been presented at academic conferences none has yet been published (though see Forsyth and Maldonado in prep), a situation which reflects systemic challenges inherent in this way of working (see Section 3.5.1).

The piecemeal approach to the recording has succeeded in providing coverage (often at a high level) for the great bulk of early medieval carved stones in Scotland, though there remain gaps. The scattered nature of these publications is a major drawback, as is the ephemeral nature of some of them (e.g. Blackie and Macaulay 1998; Byatt 2008; RCAHMS 2007b; 2008a; 2008b). It is unfortunate that the very important catalogue of south-west sculpture remains unpublished (Craig 1993). In addition to these regional catalogues, there have been handlists and catalogues of sub-categories of sculpture, most notably Pictish symbol-bearing stones (RCAHMS handlists 1985; 1994b; 1999; Fraser 2008; Mack 1997) and simple cross-incised stones (Henderson 1987a; Figure 22).

2.3.5 Analysis

In terms of analysis, the field has been dominated by Isabel Henderson who has published a series of important art-historical analyses of Pictish sculpture (see Section 10.3), culminating in the jointly authored *Art of the Picts* (Henderson and Henderson 2004). Her retirement was marked by the publication of a festschrift which brought together numerous studies of diverse aspects of Pictish and related sculpture (Henry 1997). Other important art-historical contributions have been made by Fisher 2005, Hawkes (1997; 2005; 2008), G Henderson (2013), MacLean (1985; 1993; 1997), Trench-Jellicoe (1997; 2005) and others (including L Alcock 1993a; Hall 2011; 2012b; Kilpatrick 2011; Kruse 2013; Meyer 2005; 2011) (see Geddes 2011 for a detailed overview of art-historical research).

Since the late 1980s archaeological approaches have been increasingly brought to bear on Scotland's early medieval carved stones (see, for example, Driscoll 1988; Hall 2005a; 2011; Gondek 2006b) and the field is ever more active and diverse. In addition to works mentioned either above or below, topics addressed in the past 30 years include: Pictish symbol-stones (Inglis 1987; Elizabeth Alcock 1988; Driscoll 1988; Mack 1998; Samson 1992; Forsyth 1997; Gondek 2015), archaeological context (James 2005; Mack 1998); dating (Laing 2000); architectural sculpture (Foster 2015b; Gondek 2015); the importance of fragments (Henderson 2005); stones as expressions of power and lordship (Driscoll 1988; 2000; Forsyth and Driscoll 2009; Gondek 2006) the major collections at Meigle (Hall 2014; Ritchie 1995); and Iona (Kelly 1993; Hawkes 2005, 2008; MacLean 1993) and the Ruthwell Cross (Orton *et al.* 2007; Ó Carragáin 2005).

To mark the 100th anniversary of the publication of *ECMS* an interdisciplinary conference 'Able Minds and Practised Hands' was organised by Historic Scotland, the Society for Medieval Archaeology and the National Committee on Carved Stones in Scotland (Foster and Cross 2005). It was the largest conference ever devoted to early medieval sculpture in Scotland, and certainly the most interdisciplinary (Disciplinary collaboration: Case Study 18). A local initiative to raise awareness of the important collection at Govan gave rise to a conference (Ritchie 1994a), a programme of archaeological excavation, and a series of annual lectures, some of which have touched on carved stones (Crawford 2005; Ritchie 2004; Making a Difference: Case Study 1). Further academic research (Craig 1994; Driscoll *et al.* 2005) has informed ongoing efforts to preserve and present the sculpture, which have in turn prompted further research. Published annual lectures at Whithorn and at the Groam House Museum,

Rosemarkie, have similarly presented research on the wider context of major sculpture collections, as well as directly on aspects of the stones themselves.

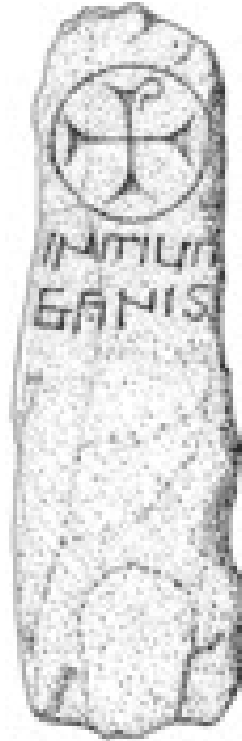


Figure 23: Inscribed stone at Kirkmadrine, Dumfries and Galloway (no. 3). Crown Copyright: Historic Environment Scotland

2.3.6 Inscriptions

Overviews of inscriptions in the roman alphabet were provided by Okasha (Pictland—1985), and Forsyth (southern Scotland—2005; 2009; Figure 17, 23); and there have been studies of individual inscriptions by various authors (e.g. Higgitt 1982; Forsyth 1995a; Will *et al.* 2003; Charles-Edwards 2004). Ogham inscriptions were examined by Forsyth (1995b; 2011; Figure 18). Scandinavian runic inscriptions in Scotland

(Figure 19) are included in Barnes and Page's British corpus (2006) with the exception of the graffiti inside the chambered tomb of Maeshowe, Orkney, which had been covered in a previous publication (Barnes 1994). The inscriptions on the Ruthwell Cross (Figure 12), in the roman alphabet and Anglo-Saxon runes, have been the subject of numerous studies (see Orton *et al.* 2007).

2.3.7 Research on protecting and recording early medieval carved stones

Since the days of Romilly Allen, there has been an acute awareness of the vulnerability of Scotland's early medieval carved stones and repeated appeals have been made to ensure these are safeguarded and preserved, not least by Allen himself (1888; 1895; 1901; Allen and Anderson 1903). Although steps have been taken to address such concerns since the 19th century, it is only comparatively recently that the heritage management of this material has been a subject of research in and of itself. Foster has done much to provoke consideration of these issues (2001; 2005b). The Scottish situation has been considered in comparison with the Welsh (Edwards and Hall 2005) and there have been specific studies on protective



Figure 24: Plaster cast of the front face of the Nigg cross-slab, made in 1894 by Leopoldo Arrighi for the Edinburgh Museum of Science and Art (now destroyed). *Crown Copyright: Historic Environment Scotland*

coverings (Muir 2005), and approaches to museum display (Yeoman 2005; Hall 2005a). New fields have been pioneered in a Scottish context by Foster (casts and other reproductions—Foster 2013a; Foster *et al.* 2014; Foster 2015a; Foster and Curtis 2016; see also McCormick 2010) and Jones (meaning and social value—Jones 2004; 2005; 2010; 2011). There have been a number of studies of recording methods (J N G Ritchie 1998; Scott 1997) including traditional photography (Gray and Ferguson 1997) and 3D recording (Carty 2005; Jeffrey 2003; 2005; Lerma and Muir 2014), also of reproductions and casts (see above; Figure 24).

2.3.8 Current developments in analyzing early medieval carved stones

As the record improves, and the body of scholarship increases, the need for multi- and interdisciplinary working becomes increasingly apparent. Several major multi-disciplinary collaborative studies have been published on important individual monuments (e.g. St Andrews Sarcophagus—Foster 1998a; Henderson 1994; Ruthwell Cross—Cassidy 1992; Ó Carragáin 2005; Orton *et al.* 2007; Hilton of Cadboll cross-slab—James *et al.* 2008; Stone of Destiny—Welander *et al.* 2003; Rodwell 2013). See also the smaller collaborative studies by Hall *et al.* 2000; 2005; 2011. In addition to art-historical and archaeological approaches, these studies have drawn, for instance,

on history, including oral history, ethnography, and social history, as well as various scientific disciplines (Figure 25) (Disciplinary collaboration: Case Study 18). New theoretical and transdisciplinary approaches are increasingly applied (see Section 3.7.2), for instance: ‘biography’ (Clarke 2007; Foster and Jones 2008; Hall 2012a; 2015a); landscape (Inglis 1987; Forsyth and Driscoll 2009; Fraser and Halliday 2011; Gondek and Noble 2011); experiential (Pulliam 2013; Gefreh 2015). The tremendous potential of this material is becoming increasingly evident and there is great scope for future research of all kinds—pursuing existing approaches and developing new ones, and picking up on older questions which have been neglected, for example the question of carving technique which has not been addressed directly since Gordon’s 1956 study of ‘Class I’ Pictish symbol stones. There is also a renewed interest in geometric ornament (Garrett 2009; Hull 2003; Stevick 2011; Thickpenny in prep). Hints at the future direction of the field are provided by a number of PhDs in progress or recently completed: Comparative approach Scotland, Ireland and Sweden (Busset 2016); Southern Scotland and northern England in the Viking Age (Barnes in prep); 3D scanning (Kasten in prep); Key-pattern (Thickpenny in prep); Iona high crosses in the natural and liturgical landscape (Gefreh 2015); Reproductions (McCormick 2010).



Figure 25: Detail of the St Andrew’s Sarcophagus. Scientific analysis identified the white/blue layer as lead-white, likely applied when plaster casts were created from the sculpture in 1839. © Sally Foster

2.3.9 Scotland's wider context

Art historians working on Scotland's early medieval carved stones have typically been at pains to elucidate artistic connections with neighbouring parts of Britain and Ireland and, where relevant, further afield (e.g. Fisher 2001; Hawkes 2005; Henderson 1967; 1983; 1986; 1994; 1999a; Henderson and Henderson 2004; Higgitt 1997; Kelly 1993; Lang 1972; Mowbray 1936; Stevenson 1956; Thomas 2013). The most comprehensive attempt to put a Scottish monument in its international context is the various contributions to Foster 1998 (St Andrews Sarcophagus). Each of the seven International Insular Art Conferences held since 1985 have featured papers on Scottish material, including sculpture, and this had been an important means of bringing developments in Scottish research to a wider audience art-historical audience (e.g. Alcock 1993; Dransart 2001; Forsyth 1995a; Foster 2013a; G Henderson 2013; Henderson 1987b; Kelly 1993; Pulliam 2013). Archaeologists whose main focus lies outside Scotland are taking increasing account of Scottish material, and scholars working on the Scottish material are increasingly looking furth of Scotland for comparisons (Gotland—Foster 2012a; 2013; Ireland—Forsyth and Driscoll 2009; Ulster and Sweden—Busset 2016).

For further reading, see Section 10.3.

2.4 Later medieval

For the purposes of this exercise, this section focuses on later medieval funeral monuments (1100–1560). See Section 2.5 for architectural sculpture and Section 2.7 for market crosses (since most of the surviving examples are post-Reformation).

2.4.1 The material

The most ambitious of the funeral monuments are large-scale canopied tombs, generally with an effigy set on a chest tomb and framed by an elaborated arch (e.g. tomb of Princess Margaret, countess of Douglas, Lincluden Collegiate Church, Dumfries and Galloway: Figure 26; see also Figures 34–5). These tombs were often conceived of as an integral element of their architectural setting, and intended to emphasise the importance of the commemorated individual in life, and to attract the prayers of the passing faithful in death. At the opposite end of the scale are gravestones set into the floors of churches (e.g. Figures 27, 32). There are around 1300 examples of later medieval gravestones recorded from just over 400 sites (Fraser 2013). The most ubiquitous type bearing 'Calvary cross' designs (Figure 27). Detailed studies of cross-slabs have been carried



Figure 26: Tomb of Princess Margaret, countess of Douglas, Lincluden Collegiate Church, Dumfries and Galloway, Dumfries and Galloway. Crown Copyright: Historic Environment Scotland

out by Peter Ryder in the northern English counties (e.g. Ryder 2001), and he has plans to extend his survey to Scotland (pers comm. Richard Fawcett).

Significant loss of material has occurred through post-Reformation iconoclasm, as well as destruction through conflicts and the re-use as building stone (Brydall 1895; Fraser 2013). Today, the majority of stones are no longer in



Figure 27: Calvary cross graveslab, Corstorphine Parish Church, Edinburgh. Crown Copyright: Historic Environment Scotland

situ, except for some rare exceptions that form part of an ecclesiastical structure (Fawcett 2002; Figures 26, 34–5). Distribution is uneven, with larger collections focussed on the ecclesiastical centres of St Andrews, Jedburgh and Melrose. However, the largest group of surviving later medieval gravestones is in the West Highlands, where they date from the 14th century until beyond the Reformation. There are over 870 pieces at 86 locations, including 108 associated with Iona alone, and it is arguably the densest concentration of its type anywhere in the medieval European world (Caldwell *et al.* 2010).

2.4.2 Overview of previous studies

Funeral monuments have tended to be studied separately, although several studies of ecclesiastical architecture have also considered them (e.g. Muir 1861; MacGibbon and Ross 1896–7), especially where they comprise part of a structure (e.g. Fawcett 2002). Fraser (2013) offers an overview of current knowledge emphasising that, by comparison with early medieval sculpture (see Section 2.3), later medieval gravestones have been a neglected area of research. In the absence of an adequate survey of grave monuments across Scotland we lack a detailed understanding of dating, stylistic variation and design evolution, particularly for graveslabs (Figure 27, 32). While no corpus exists, a database of material is being compiled by Dr Iain Fraser, HES (Fraser 2013, 12). Known stones may also be reassessed through individual projects (e.g. Adding a New Dimension to Dundee’s Medieval Carved Stones) or by the efforts of individual researchers, such as Iain Fraser’s forthcoming research on Mariota de Moray of Aldie’s incised slab in Dunfermline Abbey. Although gravestones offer strong evidence for regional variations and for masons working in particular areas, only the West Highland sculpture, comprising slabs, effigies



Figure 28: West Highland graveslabs, Kilmartin Churchyard, Argyll and Bute. © Susan Buckham

Figure 29: West Highland graveslab with sword, Nereabolls Chapel, Islay. Crown Copyright: Historic Environment Scotland

and commemorative crosses, has been comprehensively studied and recorded (Figures 28–9). Detailed surveys, first published in the RCAHMS Argyll series of Inventories, were synthesised and interpreted by Steer and Bannerman (1977). Their classification of West Highland sculpture identified five mason schools and documented 109 surviving inscriptions, providing a detailed historical background to the names recorded. Their work built on the longstanding antiquarian interest in this material (e.g. Muir 1861; Drummond 1881).



2.4.3. Reassessment of West Highland sculpture

Recent reassessment of Steer and Bannerman (1977) by Caldwell *et al.* (2010) combines archaeological, historical and geological analysis, including petrological examination and magnetic susceptibility measurements (Magnetic susceptibility: Case Study 9). Their focus on identifying quarry sources and transport routes highlighted weaknesses in Steer and Bannerman’s hypothesis of mason schools, dating and stylistic groupings. The 2010 study found issues with the 1977 groupings, which the authors felt did not consistently demonstrate clear stylistic unity or progression across all the works ascribed to the various schools (with exception of the Loch Awe category). Caldwell *et al.* found little evidence to support Steer and Bannerman’s assumptions that the carvers worked in schools or that a strong, and meaningful link necessarily existed between the carvers and major churches. Instead, Caldwell *et al.* make the case that stones are more likely to be quarried locally and once carved could accompany or follow to the deceased’s place of interment. Second, they proposed circumstances where it might be desirable to be buried away from home, for example at sites connected with saints or where a body of clergy was particularly well

equipped to offer prayers for their salvation. Finally, Caldwell *et al.* argue that the reputation of a particular carver might mean that artisans travelled considerable distances to undertake commissions. They offer initial thoughts on precedents for West Highland sculpture designs (Figure 28) but their major hypothesis deals with the particular distribution of sculpture which they conclude cannot be understood as mere fashions subject to the laws of supply and demand. Instead, they argue the restricted general distribution of stones reflects the political relations of a society that nurtured a professional caste of warriors. Caldwell *et al.* propose that depictions of swords (Figure 29) are symbolic of this caste and consciously distinctive, rather than depicting mere ‘tools of the trade’ (since documentary evidence suggests medieval warriors fought with axes and bows, which Caldwell points out are poorly represented on West Highland sculpture).

2.4.4 Research on other classes of later medieval gravestones

Fraser (2013) outlines the principal classes of later medieval gravestones and their main attributes. With the exception of West Highland sculpture (Figures 28 and 29) and effigies (which exist as both incised slabs Figure 30 and three-dimensional monuments Figure 31), current knowledge remains limited. Accordingly, other categories of stones can typically be briefly summarised. For example, the 90 known coped stones (Figure 32) occur in a wide variety of forms but with few examples found north of Angus. Similarly, Thomson’s 2013a study of discoid markers (Figure 33) identified only 12 later medieval stones, which are categorised by a typology that spans the early medieval period to the 19th century. In contrast, there have been several surveys of effigies (Figures 30–31) either as incised slabs or three-dimensional forms (Brydall 1895; Greenhill 1944; 1946; 1976; Lankester and Scott 1981). This research often includes details of tombs that no longer survive outside documentary records and provides information about the identity of the deceased where this is known. Many of those commemorated by effigies were church founders and patrons, including royalty, members of the clergy (Figure 30), knights and, occasionally, their wives. Particular attention has been paid to depictions of arms and armour (Figure 31). This focus when combined with information on heraldry, architectural detailing and inscriptions can help with dating and identifying the deceased but also contributes to an understanding of both commemoration and the history of warfare (Capwell 2005; Melville 2000; Norman 1963). In contrast to England, where the fashion for stone-carved monuments gave way to engraved brass

Figure 30: Incised effigy, Dunkeld Cathedral, Perth and Kinross. Crown Copyright: Historic Environment Scotland



Figure 31: Carved effigy tomb to the Wolf of Badenoch, Dunkeld Cathedral, Perth and Kinross. Crown Copyright: Historic Environment Scotland



Figure 32: Coped tombstones, St Serfs Churchyard, Dunning, Perth and Kinross. Crown Copyright: Historic Environment Scotland



Figure 33: Cross-head discoid marker, Collace Kirkyard, Perth and Kinross. © Iain Fraser



plates, incised effigy slabs continued in production in Scotland beyond the medieval period. Research shows both effigy slabs and three-dimensional forms were often embellished with polychromy and were influenced by continental fashions. In some cases foreign materials and masons were used, most notably for Robert I's elaborate tomb in Dunfermline Abbey, of which only fragments now survive (Fraser 2015, Robert the Bruce: Case Study 5). Fawcett (2002, 304–21) provides a detailed discussion of monumental tomb design, including details on location, forms of associated burials, dating and types of designs in churches.

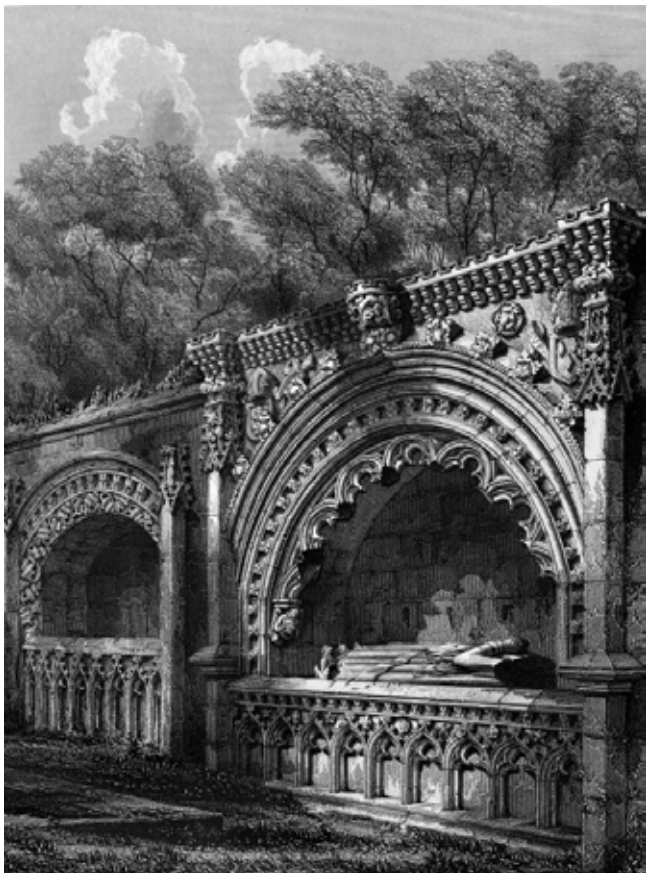


Figure 34: Tomb of Bishop Gavin Dunbar at Aberdeen Cathedral, Aberdeen City. *Crown Copyright: Historic Environment Scotland*

2.4.5 Research presented at the Monuments and Monumentality Conference at Stirling in 2011

Fawcett (2013) examined design influences for canopied tombs in more detail as part of a 2010 multi-disciplinary conference on later medieval funerary monuments (Penman 2013a). The conference proceedings contain five papers that include evidence for later medieval practices in Scotland, including Fraser's chapter discussed in Section 2.4.4. Fawcett notes that although Scottish nobles were clearly influenced by continental tomb designs after 1400, this did not manifest itself as the wholesale adoption of French fashions. He points

to several canopied tombs where individual creativity is evident. Interestingly, Fawcett is also able to highlight a group of monuments in north-east Scotland where designs were copied for later monuments over an extended period (for example the tomb of Bishop Gavin Dunbar at Aberdeen Cathedral—Figure 34—appears to have inspired the one to William Forbes of Tolquhon at Tarves Church, Aberdeenshire—Figure 35). In the same paper he also proposes that some of these tombs were used as Easter sepulchres. The relationship between liturgy and monuments is expanded upon by Holmes (2013) who uses a 13th-century liturgical commentary to interpret how clergy were taught to think about burial during the later medieval and post-Reformation period. Holmes argues the primary purpose of the monument was to provoke passers-by to pray for the deceased above any function of marking social status and that evidence for this can be seen in the tomb's placement within the geography of sacred church spaces. Holmes' paper emphasises how church monuments were at the centre of a lost complex of rituals and remembrance that related to the salvation of the soul. Viewed in this context, Holmes shows how the imagery and metaphor conveyed by commemoration, for example the depiction of vestments, could bear a more particular reading.

In common with Fawcett, Oram's 2013 consideration of bishop's tombs (Figure 34) also reveals evidence for localised responses to widespread changes in European mortuary practices. There are very few written references surviving for Bishop's tombs that document places of burial. A preliminary audit of surviving monuments identified how the placement of bishop's tombs was structured within three categories of cathedrals (Oram 2009). Much practice appeared to follow widespread European trends that supported increasingly individualised responses to burial and commemoration (for example, through interment in private transeptal or aisle chapels). However, Oram found tomb placement at St Andrews did not follow this



Figure 35: Tomb of William Forbes of Tolquhon, Tarves Church, Aberdeenshire. *Crown Copyright: Historic Environment Scotland*

pattern, possibly indicating a clear division between pre-plague collectivism and post-plague individualism. Oram argues that the influence of specific cults and local traditions held greater sway at St Andrews. Accordingly he suggests future research should seek more nuanced readings to take into account localised responses to widespread changes in mortuary practices. In contrast to Oram's paper, given the absence of material remains, Penman (2013b) relies on documentary sources to investigate the case for Scottish royal burials adopting 'programmatically' tomb designs. Penman demonstrates how English and continental practices were designed to create a programme of tomb building, embodying ideologies of 'kinship', influenced Robert Bruce and his successors. Stewarts followed suit and placed dynastic relationships as the fundamental element of their tomb design, albeit at different burial sites. Penman sees this long-standing tradition ending with the tomb of James V, when the burial of post-Reformation Scottish monarchs in Westminster Abbey became more closely subject to the influences of English politics and aesthetics.

2.4.6 Priorities for future research

Carrying out comprehensive regional surveys is an essential first step for developing a research strategy for later medieval carved stones. Such surveys need to involve geologists to identify rock types and their sources, enabling a more fruitful consideration of gravestone production and transportation to help identify different masons and trading patterns (Caldwell *et al.* 2010; Fraser 2013).

For further reading, see Section 10.4.

2.5 Architectural sculpture

This section focuses on carved stones that are details of buildings rather than being public monuments in their own right. As a category these have some integrity from a curatorial perspective. Conservation of carved stone elements *in situ* as part of historic fabric, or *ex-situ* fragments that may or not be associated with the place they were created for, can pose specific issues. It also embraces carved stones sometimes found in the grounds of buildings, such as sundials and foundations.

2.5.1 *In-situ* architectural sculpture

The later medieval period (AD 1100–1560) saw large numbers of building campaigns that resulted in

ecclesiastical and secular structures of greatly varying scales. In Scotland, with rare exceptions such as the doorway of the round tower at Brechin, *in-situ* later medieval architectural carving generally dates from no earlier than the early 12th century. From this time many of the ecclesiastical buildings, in particular, were embellished with figurative or vegetal carving, as well as with enriched mouldings (Figure 36). At the most ambitious end of the spectrum is figurative carving,



Figure 36: The Romanesque west doorway of Kirkwall Cathedral, Orkney Islands. Crown Copyright: Historic Environment Scotland



Figure 37: Detail of the south-east angle of Stirling Palace in 1900 (left), and decorated shaft corbel (right). Crown Copyright: Historic Environment Scotland



Figure 38: Engraving of the interior of Rosslyn Chapel in around 1900. Crown Copyright: Historic Environment Scotland

sometimes planned as part of complex iconographic schemes (Figure 37), though the majority of such carvings were destroyed at the Reformation, and now tend to survive only as isolated features or as *ex-situ* fragments. In addition to losses at the Reformation and under the Commonwealth, subsequent programmes of church remodelling have also destroyed or masked later medieval carved stones, although new discoveries of surviving material continue to be made, notably through the Corpus of Scottish Medieval Parish Churches. Much of the surviving carved masonry was conceived as decoration to essentially structural features, such as foliate capitals to the arches of doorways and windows, the finials at the apex of pinnacles, and blind arcading or tracery intended to enrich otherwise plain surfaces. Significant worked stonework that fulfils an architectural or structural function, such as window tracery, vault ribs, and arcade piers must also be taken into account (Figure 38). Later medieval carved stones are also an important early primary resource for heraldic information (see for example Richardson 1964).

Significant academic overviews of later medieval carved stones in their own right are rare, although the work of the medieval stone carver was the subject of the Rhind Lectures for 1949 (Richardson 1964). As in Richardson's case, expertise in later medieval Scottish carved stones was often something that developed through the course of working in a sustained way with the monuments in state care (see also the extensive and more recent outputs of Professor Richard Fawcett, examples of which are listed in Section 10.5). One major source of information is the eight volumes of MacGibbon and Ross which cover both ecclesiastical and secular architecture and include a wealth of detail on carved stones. The castellated volumes were published 1887–92 and the church volumes in 1896–7 (see also Billings 1845–52). Their surveys

provide details of historical context, descriptions, sketches and measured plans of buildings throughout Scotland, which the authors visited in person. More recently, Fawcett (2002; 2011) has provided an up-



Figure 39: Detail of sacrament house at Old Parish Church Cortachy, Angus. Crown Copyright: Historic Environment Scotland

to-date synthesis for the specific development of the medieval church. His work includes discussion of the chronologies and the typological analysis possible for carved stones as church fixtures and fittings including sections, for example, on mouldings and tracery. In addition, there are several examples of thematic studies of particular forms of ecclesiastical carved stones such as sacrament houses (Figure 39; MacPherson 1890; McRoberts 1965), altar retables (Richardson 1928) and fonts (Walker 1887). Holmes (2015) considers how liturgy was reflected in ecclesiastical furnishings, many of which included carved elements. Dunbar's 1999 survey of royal residences in the late medieval and early Renaissance period gives, in passing, a sense of the ways in which carved stones might be employed to highly symbolic effect in more secular contexts.



Figure 40. Examples of 16th- and 17th-century decorated stone lintels at the Stag Inn, Falkland, Fife (left) and Provost Skene's House, Aberdeen (right). Such carved stones could embody messages of welcome, ownership, gratitude and allegiance to God, as well as loyalty to the king (Insh 2014, 82). Crown Copyright: Historic Environment Scotland

Given that the Scottish kirk did not favour sculpture and the royal court had moved to London, the native sculpture tradition of the 16th to 18th centuries has generally been considered not strong: largely ornamental (e.g. Grant 1881) and heraldic carvings progressing into the occasional very sophisticated and elaborate tomb (Clifford 1991; Howarth 1991; see Sections 2.4 and 2.6). But even if not always aesthetically strong, recent research has shown how the ideology supporting the placement of carved stones and figurative sculpture both inside and outside buildings of nobles, academics and merchants, and in their associated gardens and designed landscapes, could be intellectually complex and can offer important social insights (Insh 2014, 54–89; Fraser 2015) (Figures 40–41). Attention has also been drawn recently to how architectural sculpture had confessional uses and, again, needs to be read as part of a larger symbolic landscape (Bryce and Roberts 1993; Dransart and Bogdan 2004).



Figure 41. Ornamental panels adorn the walls of the garden at Edzell Castle, Angus. Crown Copyright: Historic Environment Scotland

There are of course excellent architectural surveys that embrace carved stones in passing in a range of architectural contexts, e.g. Glendinning *et al.* (1996), McKean (2001), Gow (2006) and the Yale University Press *The Buildings of Scotland* series. This might be something as ‘simple’ as a carved street name or Ordnance Survey benchmark added to a building.

2.5.2 *Ex-situ* architectural fragments

Currently, no overarching survey has been undertaken

to quantify and assess the entire resource of *in-situ* architectural elements and *ex-situ* fragments in Scotland. Up to now, inventories have mainly focused on specific sites, geographical areas, periods and object types. Significant examples include the RCAHMS inventories of Argyll (notably Iona; RCAHMS 1982), incorporating architectural stones together with other classes of carved stones, and *The Corpus of Romanesque Sculpture in Britain and Ireland* concentrating on material from the late 11th century to the late 12th century. The latter initiative intends to publish a complete online record of all the surviving Romanesque sculpture. As of March 2016, nearly 2000 entries have been published online for the 5000-plus estimated sites, but only two records relate to Scotland.

Since 1995, a systematic programme of cataloguing, photographing and profiling *ex-situ* carved stones has been undertaken by Historic Scotland (now Historic Environment Scotland) to catalogue material associated with the Properties in Care that it manages on behalf of Scottish Ministers (Márkus 2003) (Figure 42). As of March 2016, this inventory has recorded over 7500 carved stones from over 58 medieval ecclesiastical and secular sites across Scotland. A further 24 properties, with relatively small-sized collections, remain to be fully catalogued in this way. This recording and analysis has improved our understanding of the earlier date, form and development of buildings, and their architectural significance (HES Explore the Collections; Figure 43). It has led to the better protection and storage of the fragments, as well as enabling new research that has informed improvements to site-based interpretation for visitors. Architectural carved collections have been redisplayed at 19 properties following this work, most notably at Dunkeld Cathedral, Dryburgh Abbey, Bothwell Castle and Elgin Cathedral (Owen and Fleming 2016; Elgin Cathedral: Case Study 21).



Figure 42: Cataloguing the *ex-situ* fragments of architecture at properties in the care of Historic Scotland. Crown Copyright: Historic Environment Scotland

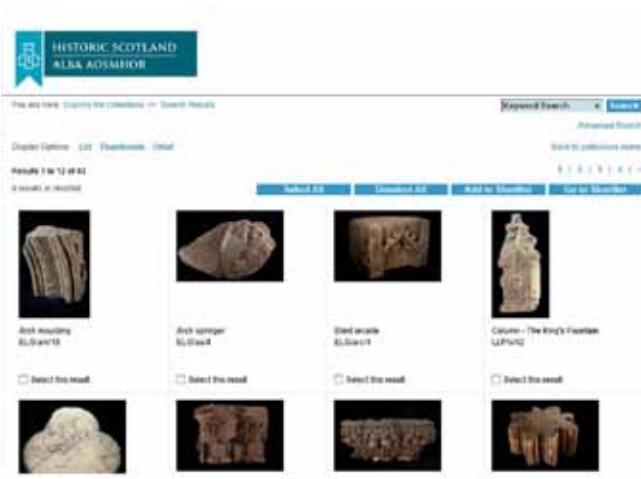


Figure 43: The HES Collections website for architectural carved stones, screen dump 26 March 2016.
Crown Copyright: Historic Environment Scotland

2.5.3 Masons' marks

Interest in masons' marks in Scotland lags behind elsewhere, with no academic overviews and masons' marks just something that tends to be noted in passing, but interest is growing with projects set up that are involving members of the public in locating sites and capturing information. The Mason's Mark project initiated by Aberdeenshire Council in 2006 and still run by Moira Greig but with an extended geographical remit, is building up an online database of where marks are to be found, but has yet to publish any academic articles. A complementary project has also been initiated by Iain Ross Wallace, a research student at the University of Glasgow, who is focussing on masons' marks in buildings from 1100 to 1300, beginning with buildings in the west of Scotland. The challenge is to use this information to answer questions about the organisation of building and stone-supply industries, including the movement of masons around Europe (cf. Alexander 2007 on Romanesque buildings in England). Greig's work has started to identify some known masons, as well as to challenge phasing of buildings (M Greig pers comm.)

2.5.4 Fountains, sundials and other ornamental sculpture

In the early modern period (from the Reformation of 1560 to the Enlightenment, i.e. about 1750), art historians have tended to draw a distinction between architectural sculpture and 'sculpture'. The latter was considered to be a neglected art form when it was surveyed for the 1991 *Virtue and Vision: Scotland and Sculpture 1540–1990* exhibition at Royal Scottish Academy, and its accompanying publication (Pearson

1991a). This project was described as 'pioneering attempt' to explore Scotland's native sculptural tradition, charting when native Scottish sculpture 'came of age', which was considered to be from the second quarter of the 19th century (Clifford 1991). While this 1991 survey filled a gap, it was exclusively art-historical with a focus on sculpture 'of consequence' (*ibid*, 14), largely of the royal court and elite who had the means to patronize sculptors in any sustained way. Architectural carvings in places such as Rosslyn Chapel (Figure 38) and Stirling Castle were acknowledged to demonstrate the masons' tradition (*ibid*, 10) and some 'sculptures' were designed for architectural settings, increasingly so in the 18th century (Baker 1991). Recent research has explored the iconographic programme of the sculptural decoration on the exterior of Stirling Palace (Figure 37; Harrison 2011).

Carvings in this period were produced in many media (a reminder of the need to take care in erecting boundaries between carved stones and other material artefacts in any period). They could also be produced by foreign masons, or under foreign influence (masons made good use of printed media), and some sculptures were also imported into Scotland.

Although it is generally perceived that carved stone featured little in the visual culture of early modern Scotland, the national adoption of Protestantism combined with rising wealth among the nobility and merchant class led to an increased desire for elaborate garden monuments. The rise in popularity of carved stone garden features stemmed specifically from the Protestant belief that decoration should have purpose. This hypothesis led to the commissioning of many fountains and, more frequently, sundials (Figure 44).

Marilyn Brown's recent monograph on the lost gardens of Scotland references freestanding stone sculptures appearing at various locations throughout the early modern period (Brown 2012). The most comprehensive catalogue of 17th- and 18th-century Scottish sundials was, however, produced by Andrew Somerville (Somerville 1987; 1990). Somerville's list is particularly useful because it records both surviving and lost sundials. By including the latter, Somerville builds upon Thomas Ross' original 19th-century account of Scottish sundials still standing (Ross 1890). Somerville splits the sundials into three categories: lectern, obelisk and facet-head. Due to their comparatively smaller number, there is no equivalent to Somerville's catalogue for early modern Scottish fountains. The popularity and co-existence of fountains and sundials during this era in Scotland serves as a reminder of the early modern Scottish elite's increased interest in science.



Figure 44: Late 17th-century sundial at Asknish House, Argyll and Bute.
Crown Copyright: Historic Environment Scotland

Not to be overlooked is the assemblages of architectural fragments and sculptural elements collected together and built into residences, particularly country houses and their gardens, in the 19th and 20th centuries. These ‘spolia’ might be brought to Scotland after the Grand Tour, imported, or sourced locally. William Burrell is probably the most famous exponent of this brief fad, which can also have a strong American connection. At Fyvie Castle, among a wide range of carved stone artefacts imported from the Continent, the NTS has a large collection of Venetian carved stone, probably 13th to 19th centuries, both built into the exterior of the early 20th-century racquets court and freestanding in the grounds. At Leith Hall, Charles Leith-Hay built various 16th-/17th-century architectural fragments of likely Scottish provenance into the exteriors of his late 19th-/early 20th-century additions to the building (pers comm. Shannon Fraser). The Hilton of Cadboll Pictish cross-slab was moved to the American Gardens of Invergordon Castle in about the 1860s (other carved stones were collected in the Castle), while Sir Walter Scott had earlier in the 19th century acquired the Woodrae cross-slab and built historic sculptures from Scotland and beyond into Abbotsford House and gardens (see Figure 88). This is important material in its own right, but also represents a fascinating development of elite taste in Scotland, in a tightly-defined period that merits further research.

For further reading, see Section 10.5.

2.6 Gravestones

This historiography considers gravestones from the start of the early modern period (1560) to the 20th century (see Sections 2.2 to 2.4 for earlier periods). ‘Gravestone’ and ‘graveyard’ serve as umbrella terms. Historic graveyards have been defined as places set aside for the disposal of human remains, which may or may not be associated with commemoration, and date from the later medieval period to sites in current use (Buckham 2006, 31). Gravestones are monuments or structures located within a graveyard that mark, or comprise, the place of disposal of human remains and/or commemorate the dead. The vast majority of gravestones are carved stones, although other materials can be used in their construction and design, and in some cases gravestones may be composed entirely of other materials (for example iron, terracotta, wood etc.). Internationally, gravestone studies are an established research area (see Tarlow 1999, 14–18; Mytum 2004), however this historiography will focus on research employing Scottish material or investigating aspects of Scottish culture.

2.6.1 The material and accessibility of existing information

After the Reformation in the late 16th century, a range of new gravestone forms began to appear in churchyards and subsequently within other types of graveyards. Forms included mausoleums (see Figure 53), mural monuments (see Figure 48), table-tombs (Figure 45), flat stones (Figure 46) and headstones (Figure 47). Their numbers remained relatively small until the later 18th and 19th centuries when there was a boom in erecting gravestones, particularly headstones (Tarlow 1999, 112; Mytum 2006, 101). Different monument types enjoyed defined periods of popularity and some could even be revived. For example, some later medieval forms, such as altar-tombs and coped stones (Figure 32), came back into fashion in the mid-19th century. Many 17th- and 18th-century gravestones bear highly detailed ‘vernacular’ carvings that often employ symbols of mortality (Figures 45, 47) and immortality, trade emblems (Figures 46–7), portraiture and religious scenes (Figure 52). Other monuments may bear heraldic arms (Figure 48). Carvings may reflect local or regional styles, and until the 19th century were usually cut from local stone. Gravestone inscriptions offer a resource for social history, place-name studies, local history and genealogy. With the development of the printing press, 19th-century lettering styles began to move away from script-influenced forms (Thomson 2001, 351). At about this time the number of mass-produced

machine-cut marble and granite gravestones in more sculptural forms (Figure 51) and marketed through printed pattern books increased. In the 20th century foreign, rather than local, stone became increasingly popular and with the introduction of lawn cemeteries gravestones became less elaborately designed.

It is hard to gain a comprehensive oversight of the number and variability of gravestones at a national level. Currently, it is difficult to put an exact or even ballpark figure on the number of gravestones that

survive. The SAFHS online list of burial sites offers a comprehensive dataset of over 3,500 graveyards but it does not include the number of gravestones within each location. In 2001, the cemetery manager for the City of Edinburgh Council noted that the Council was responsible for 39 graveyards containing approximately 115,000 memorials (Bell 2002, 30). Research suggests a significant number of stones may also be buried below the ground in graveyards (see Buried Tombstones: Case Study 35). At Govan Old Churchyard just over 25% of stones recorded in a 1931 survey are no longer visible on the ground today (Buckham 2015b, 97), however grass marks indicate a number lie below the turf.

Our understanding of Scottish gravestones is fragmentary, with existing research on Scottish gravestones often inaccessible being unpublished, out of print or held locally. The extensive literature on gravestones, including local guide books produced by community groups (e.g. Watters 1998; SUAT 1991; Carluke Parish Historical Society 2005), has not been drawn together, for example in bibliographies (Wells and Bishop 2005 being a notable exception). Published academic studies span a range of disciplines, for example, local history, archaeology, art, architecture, family history, social history, theology and geology, but there is an absence of joined-up and interdisciplinary studies to knit existing research together. When work



Figure 45: Table-stone with mortality carvings, surrounded by headstones, St Ninian's Old Churchyard, Stonehouse, South Lanarkshire. © Susan Buckham



Figure 46: Flat (or ledger) stone dated 1822, with mortality symbols and gamekeeper trade carvings, created from locally quarried slate, Keil Chapel, Lismore and Appin, Argyll. © Susan Buckham



Figure 47: Headstone with carvings denoting the trade of the deceased, portraits and mortality symbols, Calton Old Burial Ground, Edinburgh. © Susan Buckham

is undertaken as part of a wider research interest (for example for a particular geographic area, family, building or historical period) it can be difficult to quickly establish whether graveyards form part of the study or not. Gravestones are closely connected to their graveyard setting, yet many studies of graveyards fail to include a summary of the gravestones they contain. Conversely, many gravestone surveys (often incorrectly described as graveyard surveys) include insufficient information about the graveyard landscape as a whole (Buckham 2002, 64).

2.6.2 Recording graveyards: the work of antiquarians, local societies and individuals

Tarlow's description of British graveyard studies as 'overwhelmingly an amateur and provincial pursuit' holds true for much Scottish material (Tarlow 1999, 16). The recording carried out over the last 200 years, mainly by local volunteers, has rightly been celebrated for raising awareness of the artistic, historic and genealogical appeal of gravestones (Ferguson 1999; 2002; Farrell 2001). Recent research on early modern gravestones indicates that while a large proportion of this material has been lost many of monuments can be reconstructed wholly or partially from antiquarian sources (for example Monteith 1704; Jervise 1875–79; Cruikshank 1941; pers comm. Kelsey Jackson Williams). Without these records we would not be in a position to study and, to some extent, understand a part of this corpus that no longer exists. At the same time, existing gravestone surveys, whilst prolific in number and offering (as yet undetermined) potential for future studies, have also been shown to hold limited scope to be collated and analysed to gain an overview of cultural significance and condition (SUAT 1999; Buckham 2002). Difficulties in drawing this information together largely stems from incompatible recording methods and terminology (see Section 3.4.1). Inconsistent classification limits comparative analysis which can establish chronologies, identify regional trends and refine dating using stylistic evidence.

Notwithstanding the above, several studies, distinguished by their intention to provide a full and well-documented survey, do possess a strong research potential and make valuable contributions to wider knowledge. For example, Betty Willsher's unpublished field notes summarise the regional characteristics and differences in carvings on 18th-century gravestones. Her analysis draws on extensive fieldwork and is documented by a photographic archive (the field notes and photographs are held in the National Record of the Historic Environment collections, formerly the

National Monuments Record of Scotland). Similarly, Flora Davidson (1977) surveyed all surviving 17th-century gravestones in Angus and the Mearns (her inventory has recently been updated but is not yet in publication). Several graveyard studies set out site-specific practice in a way that enables comparative analysis. Their specific strengths are clarity about which stones are excluded or included in the survey, and the nature of documentation, including where stones are located as well as the quality of recording. For example, Beveridge's 1893 Crail Churchyard survey (Figure 48) combines photographs with written records (Histories in Wood and Stone: Case Study 22; see also MacDonald 1936 with its highly detailed descriptions of stones at St Andrews). Beveridge and MacDonald also carried out documentary research into the main people commemorated on each stone but without any synthesised prosopographical analysis. In more recent years there has been a trend towards providing more systematic records. For example, initially family history societies tended to record only pre-1855 stones, however in 2002 the Scottish Association of Family History Societies, which represents all family history



Figure 48: Mural monument of James Lumsden, with a central heraldic caving on the pediment, St Mary's Parish Church, Marketgate, Crail, Fife. This tomb commemorates James Lumsden of Airdrie who died in 1598. Photograph taken c.1890 by Erskine Beveridge as part of his survey of Crail Churchyard. Crown Copyright: Historic Environment Scotland

societies in Scotland, suggested that its members standardised their protocols and include all stones at a site.

There are relatively few examples of analysis applying gravestone data, beyond initial quantification to illustrate primary commemorative trends (e.g. Willsher 1985, 27–38; Proudfoot 1998). More recent studies have integrated gravestone evidence with wider documentary analysis to develop comprehensive local social histories (e.g. Cutmore 1996; Young 2002; Gullane and Dirleton History Society 2009). Graham 1958 is notable as one of the very few early studies that sought to answer a defined research question, in this case the design precedents and influences for the introduction of headstones as a particular class of monument. The direction of research has developed little from its early focus on descriptions of gravestone form and design, with brief discussions of symbology, heraldry, historical context and biographies of those commemorated (as can be seen in the *Proceedings of the Society of Antiquaries of Scotland*). Often gravestones were selected as ‘interesting’, usually on the grounds of aesthetics or age, but without any deeper reflection on what specific values they embody or how representative they may be of wider practices. Without any contextual or comparative analysis,



Figure 49: Delamination on sandstone headstone, Glassford Churchyard, South Lanarkshire. This burial site was surveyed to assess its cultural and natural values as part of the Clyde and Avon Valley Landscape Partnership’s graveyard conservation strategy. © Susan Buckham

information remains ‘ahistorical’ and questions concerning the ability of gravestones to hold social meanings and to communicate particular cultural values remain unasked.

2.6.3 Recording and researching graveyards: the work of heritage bodies

Significant progress in Scottish gravestone research has been made over the last 15 years. Prior to this, the main surveys were carried out in the RCAHMS regional inventories. These surveys included individual gravestones, initially only those pre-1707 in date, on the basis of their aesthetic merits. Graveyard surveys to evaluate conservation priorities carried out by local authorities and heritage organisations have developed various recording systems to allow sites to be compared on a consistent basis (e.g. Aberdeenshire Historic Kirkyards Project; PKHT Historic Churchyards project; conservation strategy for graveyards within the Clyde and Avon Valley Landscape Partnership Area, Buckham and Fisher 2013, Figure 49). In 2005, Historic Scotland and the Council for Scottish Archaeology’s Carved Stones Adviser held a workshop attended by 30 individuals with a professional or amateur interest compiling, maintaining or using graveyard records. The workshop aimed to gain wider feedback on the usability and effectiveness of the CSAP graveyard recording methodology, including the criteria to create a summary record of a site’s gravestone assemblage, and to create a working definition for ‘historic graveyards’ (Buckham 2006). More recently, initiatives fostering engagement between local communities and professionals leading to co-production and co-curation of resources have included gravestone recording (e.g. Archaeology Scotland’s Adopt-a-Monument project; ACCORD). Forthcoming guidance on graveyard interpretation produced by Archaeology Scotland’s Adopt-a-Monument project and Kirkyard Consulting offers useful guidance to help improve public engagement.

Research commissioned by Historic Scotland has established guiding principles and best practices techniques for graveyard conservation, including gravestone repairs and dealing with unstable stones (Maxwell *et al.* 2001; Historic Scotland 2003). The scoping report for the Edinburgh Graveyards Project identifies the main conservation management issues for urban graveyards and considers the potential for addressing these through improved local authority management and increased community stewardship (Buckham 2013a). However, there are some notable gaps in heritage-led research. For example, the

potential use of gravestones for a controlled study of stone decay has been recognised and while Scottish data has been assembled, it has not been analysed although such studies have taken place elsewhere (Inkpen 1999). Of greater concern is the lack of study given to gravestones' cultural significance in order to reflect upon their full range of potential values and to find holistic ways to assess their importance. This includes the qualitative investigation of current social values to build on existing quantitative surveys (for example Buckham 2013a; Buckham and Fisher 2013; Buckham and Dakin 2007). In addition, research is needed to help interpret gravestones at an assemblage and landscape level (Buckham 2015; 2016), rather than simply identifying individual gravestones of aesthetic and historic merit. Regional studies are beginning to frame research questions to advance our understanding of graveyards (Farrell 2001; Buckham 2015a). Priorities include characterising regional variation in gravestone design and use, and exploring how this may be influenced by local graveyard management or by the capacity of gravestones to express social identities, as well as reassessing historical sources to better understand data bias, shifting perceptions of the social value of gravestones and how commemoration operated within wider funerary behaviour.

2.6.4 Academic studies and theoretical approaches

The major study of Scottish gravestones is Sarah Tarlow's 1999 research, which is comprehensively framed by theories underpinning a 'historical archaeology of death'. This work, which uses survey data from Orkney, sets out to explore the evolution of attitudes towards western burial and commemoration. Tarlow's research is one of a small number of studies to quantify baseline trends over time for gravestone numbers, their various design elements, inscription content and identities of those commemorated, which has enabled comparative analysis with international datasets (for example Mytum 2006, 96). In particular, her study considers how mortuary behaviour may be shaped by emotional responses to death. Tarlow's work provided a welcome counter balance to previous analysis that has concentrated on use of gravestones for competitive social display. Her engagement with emotion as a fundamental element of social and cultural meaning and experience has proved highly influential upon gravestone analysis and archaeological research more generally. Tarlow identified no other Scottish studies grounded within an 'archaeology of death' framework. Similarly in 2004, McFarland observed that Scotland, unlike England, had been left out of the 'thanatological revolution' that had taken place in



Figure 50: An example of an inscription with vernacular style lettering on a headstone at New Lanark Burial Ground, South Lanarkshire.
© Susan Buckham



Figure 51: View of Glasgow Necropolis taken in around 1875 by Thomas Annan, note the gravestone with a sculptural form at the left hand side.
Crown Copyright: Historic Environment Scotland

death studies over the last two decades. More recently, multi-disciplinary interest in Scottish death, including gravestone studies, has increased through a series of conferences held at New College, Edinburgh. Although this momentum is yet to be reflected in published work, research priorities have been identified to advance an appreciation of modern Scottish death, something which future gravestone research is well placed to contribute towards (Buckham *et al.* 2016).

Several studies have explored some of the priorities outlined in Section 2.6.3, notably the role of gravestones in mediating social identity.



Figure 52: Detail of headstone to John Service (died 1637), Holy Rude Church, Stirling. The carving is based on illustrations from Francis Quarles Emblems published in 1635. Crown Copyright: Historic Environment Scotland

Questions of whether a distinctive ‘Scottishness’ in commemoration practices can be observed within migrant communities following the diaspora have been explored by several scholars but this remains an important priority for future research (MacLean 2014; Mytum 2009). For example, George Thomson’s 2006 study examines how gravestone lettering might be used as an indicator of cultural diversity. This paper first addresses the methodological issues posed by differentiating between creativity, naivety and low skill in carving (Figure 50), which builds on Thomson’s earlier methodological studies of inscriptions (e.g. Thomson 2002). Thomson concludes that, unlike in other areas, the Scottish masons who emigrated to New England abandoned the stylistic traditions of their homeland to develop new gravestone designs that reflected their new cultural identity. Notions of ‘Scottish’ identity, particularly with a Gaelic dimension, have also been investigated through the use of Celtic revival iconography (Celtic Revival: Case Study 15). The role of gravestones as indicators of social class has formed the basis for several studies. These include Cutmore’s 1996 investigation of the reuse of the early

medieval carved stones at Govan by local landowners (see also Buckham 2015b) and R Scott’s 2005 overview of monuments commissioned by the middle classes at Glasgow’s Necropolis (Figure 51).

Scholarship on 17th-century Scottish gravestones, including a recent PhD (Insh 2014), has considered the social impact of design and reception (see also Bath and Willsher 1996). Bath and Willsher show the influence of printed material, in particular the works of Francis Quarles, on vernacular headstone designs featuring religious scenes (Figure 52). Insh 2014 demonstrates that tombs of this era were part of a wider post-Reformation visual culture in which spatial arrangement was the key to interpreting images. Characterizing particular designs as ‘frontispiece’ tombs, she argues that these designs were based on monumental arches depicted in European prints, with their form intended to convey the experience of passing. Insh contends the monument’s symbols were laid out in a logical order that revealed much about the life story of the deceased and, furthermore, their future story in death. The commissioning of monuments and their design influences also forms the basis for several architectural histories (Donaldson 1987; Howard 1996). However, Ian Gordon Brown’s 1991 research on David Hume’s tomb is notable for tracing influences upon its design at the time of commission but also for



Figure 53: Circular mausoleum of David Hume and distinctive row of walled burial enclosures, Calton Old Burial Ground, Edinburgh. © Susan Buckham

identifying shifts in how the monument was perceived over time (Figure 53). He interprets subsequent literary depictions of the monument as reflecting changing social attitudes to Hume and his religious beliefs. Spicer and Raeburn have both investigated the impact of the Reformation upon commemoration and burial practices. While Spicer (2000) considers the emergence of burial aisles, Raeburn (2012) assesses the influence of the Protestant work ethic upon memorialisation and its links to changes in church doctrine, and wider funerary practices and social structures more generally.

The innovative research themes and approaches, such as biographies, materiality and landscape, currently being applied to early medieval carved stones are well suited to gravestones. However, limited research has yet been completed although there are isolated instances of gravestone biographies and long-life graveyard histories. One such example is Thomas Ashley's 2011 study of how Edinburgh graveyards were popularly perceived over the long 19th century using the evidence of city guidebooks (Ashley 2011; for other examples of a biographical approach see Boyes 1999; Buckham 2015b). Research to distinguish and define different types of graveyards on the basis of their historical development and the cultural values they embody has been considered in detail for England (Rugg 2000; Ray *et al.* 2014). This approach is proving influential upon Scottish research particularly in terms of the how gravestones contribute to the landscape character of graveyards (e.g. Buckham 2015b; 2016).

For further reading, see Section 10.6.

2.7 Public monuments

This historiography covers the early modern period (AD 1500–1815) to the later modern period (AD 1815 to end of WW2). Carved stones within the category of public monuments include market crosses (Section 2.7.4), boundary markers and milestones (Section 2.7.3), as well as stones with a more symbolic and commemorative function such as war memorials (Section 2.7.1) and statues and architectural monuments (Section 2.7.2; see also Withers 2001 and Clifford 1999 for general overviews of this category from history and art-history perspectives).

2.7.1 War memorials

We lack a precise figure for the number of Scottish war memorials that are entirely, or predominantly, carved stones (Figure 54) since the available datasets also

include monuments composed of other materials. Between 2006 and 2013, the Scottish War Memorials Project, which was carried out by volunteers and co-ordinated by Scottish Military Research Group, recorded over 5,000 Scottish war memorials. This figure includes 1,480 civic memorials, 1,131 church memorials, 190 School memorials, 840 memorials to individuals, and 344 regimental and unit memorials (www.scottishmilitaryresearch.co.uk last accessed 1 April 2016). This dataset contrasts with 2792 Canmore entries (identified using the search term 'war memorial') and 1801 entries (located using the search term 'Scotland') on the War Memorials Online database. Other recording programmes include The University of Stirling's 'Lest Scotland Forgets: Recording the Nation's Great War Memorials' project. This initiative seeks to identify and record all forms of physical memorial or act of memorialisation of the Great War, from 1918 through to the present day.



Figure 54: War Memorial, Galashiels Road, Stow, Scottish Borders.
Crown Copyright: Historic Environment Scotland

Scottish war memorials date from the early 19th century. Their introduction was influenced by a resurgence of interest in Scottish history and a popular interest in Celtic traditions arising from a Victorian fascination with Highland culture (Historic Scotland 2013, 6; Celtic

Revival: Case Study 15; Figure 54). Early examples include the monument to 309 fatalities among Napoleonic Prisoners of War at the Valleyfield Paper Mill in Penicuik and the monument at Balmaclellan Church in Dumfries and Galloway recording the names of five soldiers who lost their lives in the Crimean War. Sandstone and granite are the most commonly used stone types but imported marbles might also be employed for sculpture, while slate may be adopted for inscription panels (Historic Scotland 2013, 11).

A great deal of work has focussed on war memorials. This historiography is concerned with research on Scottish examples, rather than studies of British or wider commemoration. The centenary of WWI prompted work on several fronts. In January 2013, the First Minister launched the Centenary Memorials Restoration Fund and in the same year Historic Scotland produced guidance on the maintenance and repair of war memorials (Historic Scotland 2013). Numerous national bodies and local authorities have produced interpretation and educational materials (for example www.scotlandsfirstworldwar.org; www.scran.ac.uk/database/record.php?usi=005-000-006-018-C; www.aberdeencity.gov.uk/planning_environment/planning/conservation/pla_war_memorials.asp).

Hay's 1931 account of the Scottish National War Memorial in Edinburgh (Figure 55) was published four years after it opened. This was primarily intended as a description of the structure and an account of its establishment for those unable to visit the memorial in person (Hay 1931, v; for a more recent account see Macmillan 2014). The aesthetic importance of this building is demonstrated by its inclusion in the main overviews of Scottish art and architecture (e.g. Macmillan 1995; Glendinning *et al.* 1996, MacDonald 2000). More recently, MacLeod (2010a) explored how the memorial functioned as a figurative representation of national identity, evoked by the building's reflections of history, empire and religion, as well as through



Figure 55: Scottish National War Memorial, Edinburgh Castle, Edinburgh.
Crown Copyright: Historic Environment Scotland



Figure 56: Postcard of the South African War Memorial, Ludgate, Alloa.
Crown Copyright: Historic Environment Scotland

the actual process of its construction and opening. MacLeod also explores resistance to this collective memory by comparing the construction of the national monument to the war memorials established by local communities (MacLeod 2010b).

Academic interest in British and European war memorials largely took off during the 1990s (for example King 1993; Winter 1998). There are relatively few early studies of Scottish war memorials. A notable exception is an unpublished PhD thesis (Bell 1993) that examines the symbolic meanings and values held by WWI war memorials in terms of the changing attitudes they conveyed towards life and death. Bell's 1993 work, which focussed on Glasgow, appraised the artistic and architectural merits of monuments by grouping them into three categories: those designed and executed by memorial masons, examples created by sculptors or memorials by architects. More recently, Elaine McFarland (2010) examined monuments to the South African War, a hitherto overlooked area of research on 20th-century war memorials (Figure 56). McFarland proposes that the dichotomy of previous studies that either adopt the 'grief school's' emphasis on personal mourning or more 'functionalist' interpretations of

war memorials as conduits of political ideas negates the plurality of memory and the multi-layering of the commemorative experiences. Her analysis of both the process and results of commemoration practices linked to the South African War highlights a diversity of responses that resists a joined-up or monolithic ideology of imperialism. McFarland contends that while the process involved a close interrelationship between Scottish civil society and the military establishment, ultimately the messages conveyed by commemoration voiced each party's distinct set of needs and aspirations rather than expressing a shared vision.

Future research priorities include studies to better understand the current social values placed on war memorials particularly in light of the engagement created by the recent centenary of WWI. Rich case study biographies would help to explore how memorials evolve over time to suit new social and political needs. The question of how conservation measures intersect with ideas of authenticity, aesthetics and social values is of particular interest for war memorials as examples of historic carved stones in light of the Commonwealth War Graves Commission's approach to management and maintenance.

2.7.2 Statues and other public commemorative monuments

This section primarily deals with civic statues (Figure 59) and symbolic architectural monuments enriched by carvings and statues (Figure 58) erected during 19th century. The resurgence of interest in direct carving (without the assistance of maquettes or pointing machine) during the 20th century is noted but not expanded upon since the existing literature predominantly deals with individual artists rather than carved stones as a body of material (however see Pearson 1991a for a more thematic discussion of Scottish sculpture). Scottish examples of 20th-century carvings include Peter Randall-Page's *Body and Soul* (1994–6) on Edinburgh's Royal Mile. Purely abstract free-standing sculptures exemplified by the aforementioned work are common from the mid-20th century onwards. A more conceptual approach is illustrated by Ian Hamilton Finlay's garden at Little Sparta, which contains many poetic sculptures created in collaboration with various stone carvers. The contemporary idea of sculpture as installation lends itself to have multiple forms regarded as a single site-specific work, as well as offering opportunities to recycle older carvings (Figure 57).

The total number of carved stones within this general



Figure 57: Sidney Birnie Stewart's three 1950s carved relief panels from the façade of Gracemount High School, Edinburgh, (demolished 2003) were modified with poems by Liz Niven and installed as standing stones, Landwards, in the new school's garden. © Dianne King

category is unknown. In April 2016, Records of the Public Monuments and Sculpture Association (PMSA) suggest there are 406 examples of public, or outdoor, sculptures and monuments within Glasgow alone (see also McKenzie 2002). However, this figure also includes monuments composed of materials other than stone. Thematic recording projects include a database of commemoration linked to Robert Burns produced by the University of Dundee and University of Glasgow's Centre for Robert Burns Studies.

It is said that Scotland, in common with elsewhere in Britain, went 'statue mad' in the second half of the 19th century (Whatley 2000). Rodger uses a case study of McCaig's Tower, Oban, to suggest it was a uniquely Scottish aspect of this trend to employ architecturally influenced monuments as public or civic commemoration (Rodger 2014). Research on public commemorative monuments has tended to focus on its symbolic use to reflect collective ideas of national identity and on its contribution to the built form of cities that convey the particular 'the spirit of the age'. Whatley (2000), for example, considers statues to Burns in Scotland and worldwide with the Scottish diaspora erected after the centenary of his birth in 1859. He places this practice within the wider European trend of commemorating literary figures and heroes linked to tourism, which created a demand for 'destinations of interest'. In contrast, Carter Mckee views the creation of large urban monuments to Burns (Figure 58) as symbolic of the creation of a Scottish cultural identity during the emerging British Empire (Carter Mckee 2013). Similarly, Coleman (2014) focuses on how memorialization of prominent historical figures (in the case of Scotland William Wallace (Figure 59), Robert Bruce and Covenanting martyrs) enabled European, even transatlantic nations to define their own collective character and distinctiveness.



Figure 58: Robert Burns' monument Regent Road, Edinburgh.
Crown Copyright: Historic Environment Scotland



Figure 59: William Wallace's statue and ornamental urn, Dryburgh.
Crown Copyright: Historic Environment Scotland

Historians have tended to adopt one of two positions with regards to Scottish national identity. Some scholars suggest that in this period, Scotland's contentment

within the Union saw many Scots glorifying English national history above their own (for example Ash 1980; Kidd 1993). Others, including Coleman 2014, argue instead that it is possible to hold a historically-based sense of self identity that embraced Union but that at the same time was assertively Scottish. Coleman makes his case by arguing that the historical characters selected for public commemoration can all be read as figures symbolizing struggles for independence and against various tyrannical forces. Accordingly, these provided shared 'British' values at the same time as inducing a sense of national confidence and Scottish pride.

Another example used to investigate how Scottish national identity is mediated through public commemoration is the Wallace Monument. Despite commemorating a figure famous for opposing English rule, this monument is interpreted as memorializing the qualities that Scotland brought to the Union of 1707 (Withers 2001). This project's first design was rejected after a public uproar over its visual unsuitability to its setting but also because of its 'ambiguous symbolism', which appeared to reference nationalist agitation (Smailes 2014, 85). The National Monument on Calton Hill in Edinburgh provides a further perspective on how particular groups may reject rather than identify with the proposed collective remembrance of historic events. Gifford's 2014 study reveals how various proposals for the National Monument failed to engender a collective national feeling due to contested local politics (see MacLeod 2010b for a similar discussion of tensions between local and national issues with regard to the Scottish National War Memorial).

Future research offers an opportunity to identify all public commemorative monuments that are carved stones and to assess whether these possess any particularly significant characteristics. This might include, for example, exploring how their materiality may be used symbolically to convey specific values and meanings. Such a project would be well suited to a multi-disciplinary and inter-disciplinary approach. As most modern monuments in Scotland were erected well after the events they commemorate this raises questions about the processes by which a national public memory is created and how people's relationships with the past can shift over time. What are the social and public values of these monuments to current communities (for example the attempts in 1994–5 to remove the statue to the first duke of Sutherland atop Ben Bhraggie in Sutherland: Withers 2001)?

2.7.3 Boundary stones, milestones and wayside markers

Boundary or ‘march’ stones (Figure 60) mark the extent of authority over an area of land, whether an administrative unit (such as the extent of town’s land or other type of area, such as the sanctuary associated with Holyrood Abbey, Canongate, Edinburgh) or private property (estate markers). Canmore holds records for over 1003 examples of boundary stones. So far, this category of carved stone has not been the direct focus of academic studies. Public interest in boundary markers is underlined by community-based recording projects (for example Munro and O’Grady 2015) and local authority tourist trails (for example City of Aberdeen Council Aberdeen’s March Stones Trail). Research carried out for the Aberdeen March Stone Trail reveals boundary markers can have complex biographies and may comprise not only of carved stones. Initially the boundary markers around the periphery of the Aberdeen evolved from natural features and simple cairns into a systematic network of inscribed carved stones. A 1525 account of the city’s boundary refers to several stones including features described as ‘saucers’ and others with various holes.

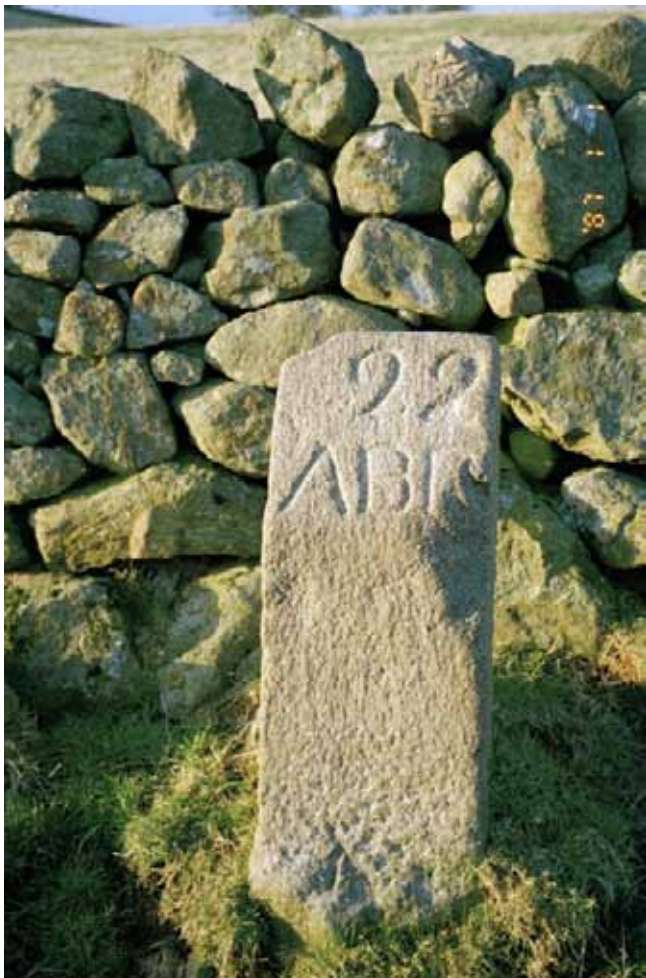


Figure 60: Boundary Stone 22, Westfield Farm, Aberdeen.
Crown Copyright: Historic Environment Scotland

Potentially these depressions were filled with lead stamped with either the town’s mark or seal. Research notes how by 1790, this system was replaced with the series of lettered and numbered stones that survive today (Aberdeen’s March Stones Trail).

Canmore contains 648 entries for milestones (Figure 61), while The Milestone Society database contains over 900 records. Many more examples are likely to have been removed or destroyed during the early part of WW2 as part of efforts to counter an anticipated invasion. The recording of milestones has not been systematic, nevertheless several local interest groups or individual amateurs have progressed regional ‘gazetteer-style’ recording projects (for example for Fife see Darwood and Martin 2005; www.wildflowersplanted.co.uk/milestones/index.shtml and for Ayrshire see www.ayrshirehistory.org.uk/milestones/index.htm). A fragment of a Roman milestone, discovered near Ingliston in the late 17th century, represents Scotland’s earliest surviving example (see Section 2.2) however, the majority of milestones date to the 18th to 20th centuries. These stones are typically associated with the 18th-century military roads and the emergent network of canals and turnpike roads in the 19th



Figure 61: Milestone with benchmark, Lower Largo, Fife.
Crown Copyright: Historic Environment Scotland

century.

Milestones occur in a variety of forms and can differ in the complexity of information presented (Wallace 1911). By the 19th century, road milestones may be made from stone or cast iron or a combination of these materials. Milestones may also bear incised Ordnance Survey benchmark symbols (Figure 61), a form of carved stones in their own right. Research into milestones as a group of monuments is limited, although 18th-century military examples have been studied as part of wider analyses of the military roads network (for example Wallace 1911). Equally a handful of regional-level analyses exist, with Fife particularly well documented (for example Stephen 1967; Darwood and Martin 2005). A good number of stones survive in East Fife as when all wayside markers and the cast iron caps from the milestones were removed at the outset of WW2 the local authority catalogued and arranged for their safe storage and replacement after the war (Fife Council, 2006). In 2006, Fife Council undertook a programme of preservation and restoration of its collection of milestones and wayside markers.

2.7.4 Market crosses

From the foundation of Scotland's burghs in the 12th century, market (mercat) crosses were erected or reconstructed as iconic expressions of the social and economic status of a town and its inhabitants (Figure 62). Found across Europe, the Scottish ones are distinctive in their architectural composition, style and iconography, which normally included religious and heraldic emblems. Not only were these symbols of a burgh's right to trade, and where they did this, they became places used for a variety of community events, ranging from making public announcements, festivities and dispensing of law.

Until the recent PhD (and associated popular account) of L Thomson (2000; 2004), there has been little serious academic study of market crosses, or the related crosses found in graveyards, some of which became market crosses or fulfilled some similar functions (e.g. McCulloch 1857; Drummond 1861a; 1861b; Small 1900; Black 1928; Mair 1988). According to Thomson, only about 20 Scottish later medieval examples survive, with the majority dating to the 16th to 18th centuries, and some 19th-century reconstructions. Many were destroyed or are now fragmented. Most of the survivors, some of which have moved, are vulnerable to weathering and a host of human activities that possess the potential to damage the crosses or their setting. Their archaeological context has scarcely

been considered (this parallels the tendency to list rather than schedule them in terms of designation). Thomson's research, which is available online, begins with a valuable literature review that addresses the historical context, architectural characteristics and survival of Scottish market crosses, in the context of such monuments elsewhere in Europe. It also reviews the effects and mechanisms of stone weathering and soiling, stone conservation practice and policy, techniques for recording and mapping stone condition and risk assessment methods. The focus of her original research, however, is on the development of a risk assessment model, i.e. addressing conservation needs.

For further reading, see Section 10.7.



Figure 62: The restored late-medieval market cross at Culross, Fife.
Crown Copyright: Historic Environment Scotland

2.8 Heritage and conservation

This historiography aims to highlight some of the trends and pulses of activity in relation to heritage research as it relates directly to carved stones in Scotland. Other, broader heritage and conservation literature will feature in Sections 3–6, which in their thematic approach embrace all aspects of heritage management and conservation (see Section 1.4).

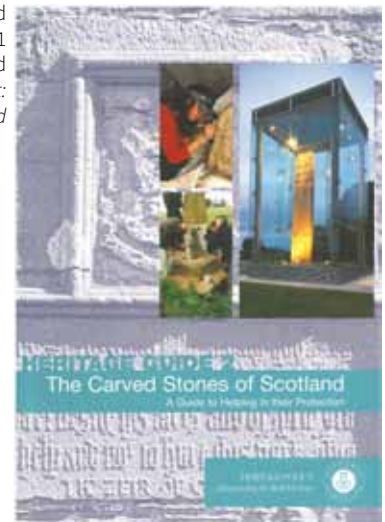
2.8.1 Historical perspective

From the late 18th century, an interest emerged in the protection of early medieval carved stones, culminating in the 1890s with the Society of Antiquaries of Scotland's creation of a national corpus, published in 1903 (Allen and Anderson 1903; see Section 2.3). Early efforts to record gravestones were also stimulated by the desire to encourage better protection (e.g. Jervise 1875–9). To secure the future of carved stones, many 19th-century

owners patriotically gave them to the National Museum of Antiquities in Edinburgh, at a time when this was only significant archaeological museum in Scotland. There were also local initiatives to secure the preservation of monuments, as at Meigle and Govan (Buckham 2015b). As more monuments came into care, the state and others heritage bodies acquired monuments that comprised of or contained carved stones. No sooner was the Ancient Monuments Protection Act passed in 1882 than some of the earliest (and controversial) casework for the first Inspector of Ancient Monuments involved finding ways to protect carved stones on the sites they had been found on, rather than pass them to museums (Foster 2001). With this Act the collecting practices of those looking after monuments and those managing museums collided since there was now an active drive to preserve stones locally. How to house and display collections of carved stones was also an early concern at monuments in state care (e.g. St Andrews: Foster 1998b). Such heritage activity related to carved stones is not much documented in published sources until the end of the 20th century, although government files in the National Archives of Scotland have potential as a largely untapped source. Although archives and other sources, such as Kirk Session records, can contain some useful information (Boyes 1999), the research value of this information is presently largely untested.

The last decade of the 20th century and first decade of the 21st saw Historic Scotland, the lead government agency for the historic environment, give carved stones a prominence. In 1999 a joint meeting of the Ancient Monuments Board and Historic Buildings Council convened to discuss post-Reformation gravestones, while in 2000 the Ancient Monuments Board took the preservation and presentation of Christian monuments as its theme (as did the Ancient Monuments Board for Wales in 2001). The various HS initiatives reflected the combined efforts of the Technical Conservation Research and Education (TCRE) Division under Ingvál Maxwell and Ancient Monuments Division (AMD) under Professor David Breeze. For the latter 'carved stones' was an identified thematic strand with staff who took an overview of it. It is no co-incidence that this is the time when the NCCSS was founded. Inspectors in the AMD led on the production of government policy and guidance for carved stones (Figure 3; Scottish Executive 2005; a development of the 1992 policy only published as an Appendix in Maxwell 1994) and an interpretation plan for carved stones across HS's estate, an attempt to raise the profile of the resource and engender more joined up thinking and working across the Agency (described in Foster 2002b; 2005a). The AMD also produced a succession of short but attractive guidance

Figure 63: Historic Scotland information leaflet from 2001 offering guidance on carved stones. *Crown Copyright: Historic Environment Scotland*



leaflets for owners and others to inform them about the significance of the monuments on their land and to advise them on how to look after them (Figure 63). However, it is notable that HS never produced anything in a similar vein to English Heritage's 2011 *Designating Listing Selection Guide: Commemorative Structures* guidance to help assess the significance of individual stones. Around the same time, the group in the AMD dealing with the collections at monuments in state care, under Richard Welander, began research to evaluate the extensive ex-situ architectural fragments surviving at the monuments, a long-term strategic initiative that is now starting to bear impressive fruit (see Section 2.5; Elgin Cathedral: Case Study 21). As part of the national WWI commemorations, Scottish Government launched a Centenary Memorials Restoration Fund to support the conservation of war memorials of all types and dates in Scotland.

TCRE, the universities and others it worked with were strong proponents of stone conservation research (not specifically carved stones). Part of a wider international research community of interest (see e.g. Ashurst and Dimes 1990; the SWAPNET network; International Congress(es) on the Deterioration of Stone, meeting for the 13th time since its inception in the 1970s in Glasgow in September 2016; ICOMOS International Scientific Committee for Stone), they also initiated a lot of complementary research on related materials, important for composite monuments. This is not the place to produce a review of wider stone conservation literature (see Henry 2006; Doehne and Price 2010) but it is notable that the focus of HS scientific research in relation to carved stones was gravestones. The literature that TCRE produced is now dated (see Section 2.7 for an assessment of this work and the identification of gaps). The present research growth area is consolidants (for earlier research see Young *et al.* 1999).

TCRE commissioned Research Reports, Technical Papers and Technical Advice Notes in relation to understanding stone decay (weathering, the impact of biological growths, in particular), preventative and remedial treatments (such as removal of graffiti, use of biocides) and the effectiveness of treatments (stone cleaning and its consequences). The development of techniques for monitoring the condition of carved stones, assessing risks and identifying priorities for action was and remains an issue (e.g. Thomson and Urquhart 1999; Thomson 2000; Condition monitoring at Ormaig: Case Study 37). There is a useful history of TCRE's interest in gravestones and graveyards in Buckham 2002, including the establishment of the Carved Stones Adviser Project (CSAP) in 2001, a joint initiative with AMD, and TCRE's commissioning of a national assessment of gravestones and graveyards (SUAT 1999). One role of the CSAP was to evaluate the Historic Scotland Practitioners Guide (Maxwell *et al.* 1997). This led to the identification of new areas for guidance, such as Health and Safety, the HS electronic graveyard leaflets, and the establishment of the Graveyard and Cemetery Liaison Group (which ended in 2006, with the Carved Stone Adviser post), which



Figure 64: The carved outcrop on the top of Dunadd fort in Argyll and Bute is covered for its protection from weathering with an accurate copy.
Crown Copyright: Historic Environment Scotland

acted as a cross-sector advisory group for Health and Safety and other policy development. HS organised a conference on graveyards (Dakin 2002) and CSAP devised literature on recording (including condition adapted from the Carved Stones Decay in Scotland Project: Yates *et al.* 1999), funding and research. Historic Environment Scotland has more recently produced shorter INFORM Guides and Short Guides to provide practical advice for a wider readership about some of these issues. See Section 10.8 for details.

In recent years HES developed, in the form of the architect Dr Michael Burgoyne, and has retained to a degree, a significant amount of expertise in the conservation of rock art sites. Pooling and sharing this knowledge, along with that of independent researchers working on rock art projects, including those involving volunteers (notably Tertia Barnett), is highly desirable.

2.8.2 Some key themes

As identified in Section 1.3, from a heritage perspective, carved stones stand out as being things that can move from being portable to fixed and that means they are treated in different contexts as 'artefacts' and 'monuments', things to which different values and heritage practices are associated. Since most carved stones can technically be moved (even bedrock), much of the heritage discourse surrounding the protection of carved stones has focused on the pros and cons of whether they are best preserved *in situ* (which in this context does not just mean their original context, but where they are presently found, since value attaches to their later biographies too: Jones 2004, 66). While recent research has highlighted this issue, its history in Scotland and its legacy (Foster 2001; 2010a; Jones 2004), the current implications of this 'schizophrenic' identity need addressing further, not least for legal protection and 'ownership' (Section 5.2).

Social value now has to be factored in too (see Section 4). Jones' research on Hilton of Cadboll produced recommendations for Hilton of Cadboll, early medieval carved stones and for heritage management in general. Among these it reinforced the desirability of keeping (early medieval) carved stones as close as possible to their historic locality but made the point that, even where the stated heritage practices might align with this approach (Breeze 2000), the rationale was largely based on historic and aesthetic value rather than social value (Jones 2004, 66); her work revealed the role of carved stones in the relationship between community and place, how the threat of removal of carved stones can exaggerate this relationship, and

how failure to research and act on social values in such contexts inevitably leads to tensions between different communities of interest (Contemporary social value: Case Study 14).

If stones are not moved then the conservation strategies to preserve them *in situ* usually involve material interventions, possibly to the fabric of the stone but most likely to its immediate surroundings. By the 1970s and 1980s, Scotland was notable for the number of early medieval monuments around which shelters were erected, to preserve them *in situ*, most notably Sueno's Stone. This approach inevitably begs questions about its short- and long-term efficacy (Muir 2005; Sheltering monuments: Case Study 17), aside from issues with impact on aesthetics, other values and physical access, all of which are scarcely researched (Jones 2004, 66). The impact of such events—the intersection between material transformation of a carved stone, scientific interventions and cultural value—has not yet been explored, although qualitative research in relation to Scottish buildings has found that decay is integral to an appreciation of value and hence significance, so heritage science needs to be sensitive to this (Douglas-Jones *et al.* in press; Science, value and material decay: Case Study 8). Understanding of the impact of conservation measures and display in museums contexts is also a gap.

A related heritage issue that is beginning to be explored is the substitution of replicas for relocated stones, old and new, digital and analogue (Figure 64; Jeffrey 2015; Foster and Curtis 2016). Aspects of their production have been researched, but processes in the late 20th century are not well documented (Bryce and Caldwell 1981). Replicas remain an important tool in the heritage managers' tool box, and with new digital technologies they can be produced in many new ways (Section 3.3.2), but many questions remain to be addressed, not least their impact on values and the heritage implications of this (see Section 4.3.5). Authenticity and carved stones, including replicas, is discussed in Section 5.3.4.

An issue explored with different success rates by HS and others working on rock-art projects in Britain, such as NADRAP, ERA and RAPP, was the extent to which volunteers can provide information that will usefully help with the monitoring of carved stones (e.g. Barnett and Sharpe 2010; CARE project: University of Newcastle 2014; Rock art recording: Case Study 29; see Section 6.2.9). This boils down to the question of whether volunteers can provide reliable information at the micro- as opposed to micro- or mega- level of detail (see Section 5.2.4). By way of comparison, the evaluation of the Scotland's Rural Past project showed that even after good training of community

archaeologists in surveying sites, professional skills were still needed (Scottish Cultural Enterprise 2011, 43).

A particular challenge in producing this overview has been that many of the advances in heritage conservation practices and associated research is undertaken by heritage bodies working on monuments in their care and they tend not to publish their work in peer-reviewed publications, although it may be well documented on internal files. This contrasts to policy and guidance literature that is aimed at external as well as internal audiences. For hints of the perhaps routine but cumulatively significant work we are often dependent on the grey literature of popular or technical magazines, such as *Historic Scotland* (Figure 65), *Focus*, *History Scotland*, *Archaeology Scotland* and *Discovery and Excavation in Scotland*. A further body of very significant grey literature is the conservation management plans and other similar monument and site-specific documents that are written for the benefit of monument owners and other bodies and that are not normally published, online or otherwise. There is a lot that could be done to review that body of research, put it into context and build on its outcomes (see Doehne and Price 2010, 66–74 on how to do this effectively). A

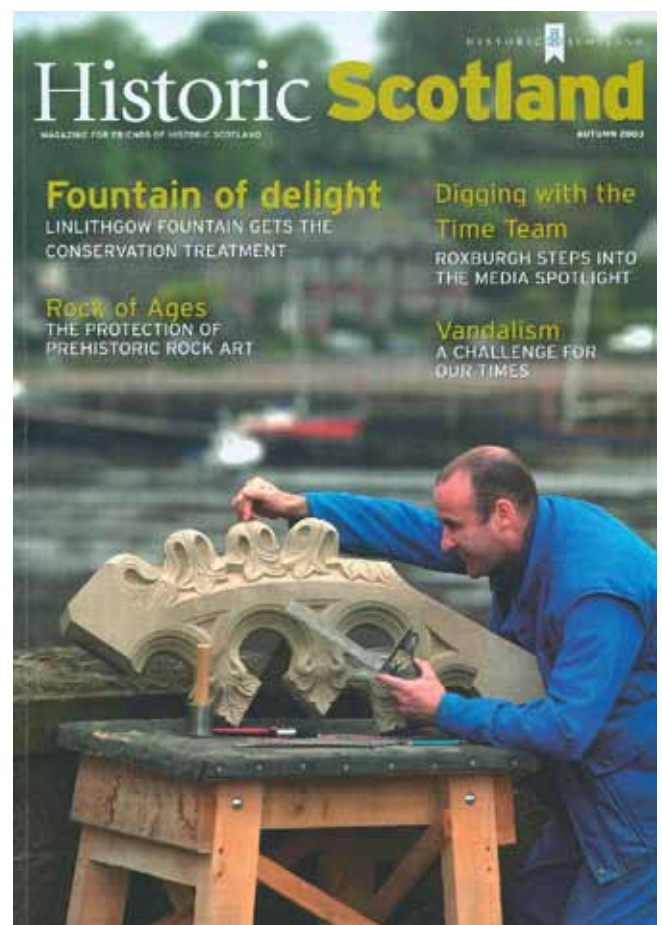


Figure 65: Whether explicitly or otherwise, short articles on carved stones have often been a feature of the *Historic Scotland* magazine for its Friends.
Crown Copyright: Historic Environment Scotland

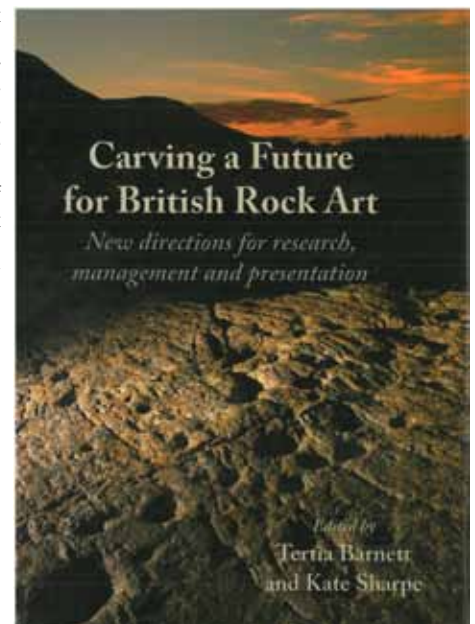
related factor is that there has been relatively little by way of major strategic research projects in relation to Scotland's carved stones.

Further, as Sections 2.1–7 have shown, much of the past research has been driven by a desire to acquire knowledge about carved stones in the past (their historical significance—see Section 4.3.1). Heritage requirements have led to some of that research, with the recognition of the benefits of new research to inform visitor interpretation schemes (The Iona stones redisplay: Case Study 26). However, so far very little research on carved stones in Scotland has been driven by the need to understand their values (but see Jones 2004), strategic research to inform protection has been patchy, and there has also been very little research on the practices and consequences of carved stone conservation, interpretation, display, and presentation. The 2003 Able Minds and Practised Hands conference and its associated publication (Foster and Cross 2005; Disciplinary collaboration: Case Study 18) is probably the only occasion in which a large group of heritage professionals drew on their diverse and extensive institutional back histories and reflected on the implications of this, at a single moment in time, for all aspects of the heritage conservation cycle in relation to a select body of carved stones in Scotland (but note Barnett and Sharpe 2010 for rock art in Britain; Figure 66).

Carved stones possess an innate value as vehicles to study the history of conservation techniques, particularly since WW2 (Boyes 1999), and the evolution of heritage practices more widely. This is of value in its own right, and because it informs what future directions for carved stone research need to be more generally as well as informing the specifics of a particular conservation case. For instance, several studies suggest the potential for gravestones to act as a laboratory to study decay processes (Inkpen 1999) but analysis has not taken place that has fed back into strategies for graveyard management (see Section 5.3.4).

Overall, this means that there was a concerted but now thoroughly outdated strategic effort to address the conservation needs of Scotland's early medieval carved stones at the turn of the 19th and 20th centuries and there was some useful, but in practice only starter, initiatives in relation to gravestones and graveyards at the beginning of the 21st. Work on collections of *ex-situ* carved stones is impressive but is limited to monuments in state care. That still leaves a significant gap in research in relation to (rockfast) rock art (see Section 5.3.5). This is a developing field of international enquiry but one that already includes some long-term

Figure 66: Barnett and Sharpe (2010) offers a very useful overview of many issues relating to heritage management and conservation of prehistoric rock art in Britain.
© Oxbow Books



and significant programmes of research (Doenhe and Price 2010, 58–63; Darvill and Fernandes 2014a; see Section 2.1). Heritage activities in Scotland in relation to rock art have largely been driven by the desire to make sites more accessible to the public and to improve their setting (Foster 2010b).

The effectiveness and impact of all the recent heritage initiatives have not, to the best of our knowledge, been critically researched, although visitor satisfaction at new carved stone facilities has presumably been evaluated by the providers in some instances. This applies to initiatives such as Archaeology Scotland's Adopt-a-Monument Scheme, local kirkyard projects (see examples in Section 2.7), and HLF-funded landscape partnership that includes projects relating to carved stones. These are welcome initiatives that have generated bodies of guidance and best practice but which may not be easy to access, such as conservation management plans.

Meanwhile, Scotland is presently in the vanguard of digital recording for conservation science and reconstruction purposes, as seen in CyArk's work at Rosslyn Chapel, but this is not without considerable issues (see Section 3.3.2). HES continues to review its technical conservation research priorities, and these include gravestones (Ewan Hyslop pers comm.)

For further reading, see Section 10.8 (heritage and conservation) and Section 10.9 (digital recording).

3. CREATING KNOWLEDGE AND UNDERSTANDING

3.1 Introduction

Knowing what we have is the starting point of the heritage conservation cycle. The ways in which we capture, classify and collate information about carved stones reflects, however, not just our current understanding of them but the academic and scientific values we associate with them. Thus there is a cyclical relationship between the creation of knowledge and our values (Section 1.4). New understandings may alter or refresh how we value certain stones, which in turn, may prompt new questions, both about the stones themselves and the formation of values attached to them. The key to effective recording, therefore, is that it be research driven and that it recognise this relationship between knowledge and value (which in turn needs researching in its own right: see Section 4).

Surveys should capture the gamut of what is currently thought to be significant about specific types of carved stones. This may go far beyond recording the physical attributes of the stone itself and may include its immediate context, wider landscape setting and social practices (past and current) linked to it. We should be ambitious and seek, not only to address our current questions, but to enable the continued development of new perspectives. Section 2 provides a sense of the diverse range of agendas that have driven past recording programmes, the diversity of recording practices, and where the imbalances lie. For example, interest in recording gravestones has been propelled more by local, rather than academic, interest in inscriptions or 18th-century carving whereas the creation of typologies for gravestones (e.g. Tarlow 1999), as for the majority of carved stones types, has arisen largely from academic analysis. This is just one example of the lack of awareness of collaborative opportunities between researchers using the same datasets and researching similar themes. The same might be said for aligning conservation- and heritage-led research on carved stones (which may be very case-specific) with more strategic, research agendas.

The emerging interest in carved stones using the research themes of materiality, biography and landscape (see examples cited in Section 2) illustrates how our understanding can be developed through analytical frameworks but also highlights the many gaps in knowledge that prevent this analysis being carried out for stones of different periods.

By creating records of carved stones we capture data that, when disseminated, enables us to acquire further

knowledge about the resource. Within this process we need systems to classify data and schemes to organize it on the basis of similarities and difference. By placing records into different types of datasets we can make them available, with the format depending on the intended application of information. Increasingly we are drawing on digital technologies and scientific techniques to capture evidence from carved stones.

The creation of records requires the development of agreed taxonomies and the organisation of information into datasets. The main datasets for carved stones are Canmore, corpora, handlists, thematic datasets and audits.

See also Section 8.1 Table 1, Section 8.2 Table 1 and Section 8.3 Tables 3, 5 and 9.

3.2 Theoretical perspectives

3.2.1 Legacy of existing scholarship

The nature and scope of past research on carved stones varies greatly between periods and types: in some areas there is a substantial legacy of past study, in others much less work has been done (see Section 2). Since 2012 the NCCSS has maintained on its website an annual bibliography of published research and online resources on carved stones in Scotland. Section 10 of this ScARF provides extensive bibliographies of existing research in each sub-field of Scottish carved stone research.

Even when researchers are aware of existing studies, there are problems of access. The interdisciplinary interest of carved stones means that relevant material is widely scattered in disparate, sometimes obscure, sources. The accelerating drive towards Open Access publishing via the web means that in future academic research is more likely to be readily accessible, but there remain difficulties in accessing existing scholarship. While progress has been made in digitizing complete runs of many relevant journals, less attention has been given to digitizing out-of-print books or other hard-to-access material (e.g. short-run publications by local museums or special interest societies). Another difficulty concerns access to relevant research hidden in 'grey literature' (i.e. materials and research produced by organisations for internal use but not published via commercial or academic channels). While much could be done to disseminate such material via the web, there remain hurdles, e.g. issues of copyright, intellectual property, commercial sensitivity, and privacy, not to mention the sustainability of platforms when material has been produced by commercial outfits, rather than

institutional bodies with an obligation to maintain archives.

Further problems of access arise from the often highly specialist nature of many publications which are aimed at a specific discipline and therefore assume certain background and/or technical knowledge. There is a need for authoritative yet accessible overviews (capable of reaching researchers in other disciplines and also a non-academic audience), yet researchers may find it hard to prioritize the production of these over primary research, especially, given current pressures on UK academics to prioritize publications eligible for periodic assessments of research quality (Research Assessment Exercise/Research Excellent Framework). The number of researchers with the necessary skills and knowledge is few in comparison with the scale and significance of the carved stone resource and there is an ongoing need to build capacity in the relevant specialist skills.

There is much basic research to be done and many fundamental questions remain unresolved. While adequately recording bodies of material to a modern standard is a *sine qua non*, it is wrong to view recording and analysis as separate and sequential steps (Section 3.4.1). Rather there is a close cyclical relationship between the two: decisions regarding what to record and how to record and present it are based on understanding of the material and how it is valued; while the nature of the record shapes which questions can be asked of it. Even where bodies of material have been well recorded there is danger in viewing this as an end in itself and it is essential to continue to apply new perspectives to well-known material, returning to existing data and existing scholarship.

Current research builds on the foundation of past work not only in terms of knowledge but also in terms of the cultures of thought which have evolved in each sub-field, implicitly or explicitly influencing what is studied and how. In order to discriminate between the helpful and the unhelpful aspects of this legacy it is necessary to understand the biases and agendas of past scholars (and to acknowledge that current work is also subject to biases and agendas of which we may not be fully conscious). The most rigid divisions have tended to be chronological, with few studies looking at themes/issues across period boundaries, though there are signs that approaches developed in relation to one period are being applied in others (e.g. Gondek 2015).

While the central message of this ScARF is that there are advantages to be gained from a cross-cutting 'carved stones perspective', these gains must be balanced against the risks in separating carved stones

from other aspects of their contemporary context (Histories in wood and stone: Case Study 22). Due attention is required to the implication of these and other methodological decisions, such as, for instance, categorical distinctions of ecclesiastical versus secular, urban versus rural, architectural versus non-. While these can be meaningful and helpful divisions, problems arise if categories harden to 'silos', inhibiting fresh perspectives which can bring new insights. Similarly, the ethnic labels (e.g. 'Pictish', 'Viking') which have been invoked in the study of early medieval sculpture in Scotland are a two-edged sword. On the one hand they serve to focus scholarly attention and attract popular interest, while on the other, their use risks over-simplifying a more complex, nuanced and fluid reality.

The focus on Scotland in this ScARF is a pragmatic one shaped by institutional remits and funding mechanisms but we acknowledge that modern national boundaries are irrelevant to much of the material under consideration. For example, it is a matter of regret that the British Academy's *Corpus of Anglo-Saxon sculpture* takes the modern boundaries of England as its limit, thereby omitting from the catalogue the significant body of Anglo-Saxon sculpture from southern Scotland (including the Ruthwell Cross) which is included only as 'comparative material'. It is encouraging that, by contrast, two current studies take an explicitly cross-border perspective (Whitworth 2016 in press; Barnes in prep). Questions of 'what is Scottish?' also bear on material further of Scotland, e.g. the Scottish cemetery in Kolkata, India, founded in 1820 and containing over 1600 headstones and monuments, almost all made in Scotland (The Scottish Cemetery in Bengal: Digitising the Untold Empire: Figure 67).

Since the 1980s there has been a growing desire within archaeology to explore the utility of intellectual frameworks originating in other humanities and



Figure 67: A Scottish team compiles condition reports on burial monuments in the Scottish Cemetery, Kolkata, Bengal, on behalf of the Kolkata Scottish Heritage Trust, 2008.
Crown Copyright: Historic Environment Scotland

social sciences (including philosophy, psychology, anthropology, literary studies, etc.) for the interpretation of archaeological data, including carved stones. An important consequence of this been the demonstration that even apparently ‘common sense’/empirical approaches are shaped by implicit theoretical standpoints: there really is no escape from theory. The application of ‘theory’ to archaeology has opened up radically new ways of thinking about the material. These are centred on an exploration of the relationship between people and things. In relation to carved stones, the relevant approaches can be subsumed under three broad headings: materiality (Section 3.2.2), biography (Section 3.2.3) and landscape (Section 3.2.4) (see Williams *et al.* 2015a). These three have much in common, indeed, there is considerable overlap between them, and they are to be viewed as complementary not exclusive. Neither are they to be viewed as negating or superseding established disciplinary approaches to carved stones (e.g. ‘traditional’ art history) for these are far from exhausted: a holistic view should encompass them all.



Figure 68: Detail of early medieval cross-slab (Iona no.75) made from mica-rich hornblende schist which sparkles in sunlight, recalling a metalwork cross. © Katherine Forsyth

3.2.2 Materiality

Archaeological thinking about ‘materiality’ provides a framework to explore how carved stones are made and experienced rather than simply focusing on their meaning (although analysis may help to reveal this). This theoretical approach originated in philosophical interest in structures of embodied human experience and consciousness (phenomenology) which spread to other social studies, including archaeology in the 1980s. Theories of materiality emphasise that people encounter and engage with carved stone in a multi-sensory way that includes not just vision but also touch, smell, and hearing. People’s engagement with monuments is not only or indeed primarily intellectual, but also physical and emotional, and takes place within a wider social, cultural and physical context (Tarlow 1999). The on-going dynamic of these human-artefact relationships may be complex and hard to recover but it is through these interactions that meaning is created (Figure 68). Carved stones are viewed as being imbued with ‘agency’ in the sense that they are understood to act on people (though, of course, it is understood that in reality the agency is that of humans acting on other humans via carved stones).

The physical nature of the material itself is the starting point, but from the viewpoint of human engagement. Materiality is thus a fundamentally humanistic perspective. In looking for the human stories behind monuments, materiality is a useful angle for presenting monuments to the public because the narratives it yields can resonate more readily with contemporary audiences who, in a post-Christian world, may lack the knowledge or interest to make sense of iconography. A materiality approach is likely to give heightened attention to the processes of a monument’s creation, not just its reception by an audience. These may include practicalities of quarrying and transporting stones, the way in which the physical nature of the stone itself enables or constrains carving, the conception and design of carvings, the technical processes of carving itself, the status of carvers and their relationship to designers, patrons and audiences.

Archaeological approaches to materiality are inherently interdisciplinary, but they could benefit still further from a wider range of dialogue. Materiality is an area in which cutting-edge archaeological-science and social theory may work hand-in-hand. There are a variety of destructive and non-destructive methods of analysing the material from which objects are made and the traces of natural and human action on stone surfaces (Section 3.6). Materiality’s focus on the experiences of artists/artisans can benefit from ethnographic comparisons and engagement with contemporary

craft practitioners. To date this is an under-exploited seam, but Edinburgh College of Art's Stone Project—which drew on the testimonies and experiences of contemporary fine-art sculptors in stone together with those of traditional stone-carvers in other parts of the world—constitutes a valuable resource for future work in this area. (See [Case Study 10: Stone Project](#))



Figure 69: Grave of Lieut. the Hon. Alfred Walter Charteris, d. 1873, Aberlady kirkyard, East Lothian, closely modelled on early medieval cross from Soroby, Tیره. © Copyright Kim Traynor and licensed for reuse under this Creative Commons Licence

).

3.2.3 Biography

Older studies have tended to privilege the moment of initial creation/construction of an object (its 'birth'), with less interest directed at the later stages of its 'life' (or indeed, multiple 'lives'). A more holistic view would see it as impossible to fully understand a given object through a focus on any one aspect of its existence. The notion that things could be thought of as leading social lives derives from social/cultural anthropological theory (Appadurai 1986), but the metaphor has been readily adopted by archaeology (e.g. Gosden and Marshall 1999) where it has encouraged a focus on an object's modifications, movements, changes in meaning, neglect, re-purposings, decay, destruction, etc. It is a people-focussed approach which emphasizes human investment in objects and encourages consideration of social aspects of artefact production and consumption alongside the purely functional. By focussing on the values attached to stones in the past, the biographical approach blends seamlessly into a consideration of the contemporary values of stones (see Section 4.3.3). The biography of an object extends to replicas and representations of it, and citations of its form in other monuments (Figure 69). These can be taken to

constitute its 'composite biography' (Foster and Curtis 2016).

The biographical approach is particularly appropriate for the investigation of carved stones, whether as individual objects or classes of object. The durability of the raw material is one reason why carved stones can be seen frequently to have lived multiple lives (Clarke 2007): they accrue meaning and significance through their longevity. Examples include: prehistoric cup-marked stones re-used in the early middle ages as Pictish symbol-stones; Roman sculpture reused as spolia in later structures; early medieval sculpture cut down into building blocks and reused (sometimes multiple times) in medieval and modern buildings; early medieval cross-slabs re-used as gravestones in the early modern period, as at Govan, or, famously, Hilton of Cadboll (Foster and Jones 2008); stones of all periods incorporated in the gardens and designed landscapes of the gentry. Value can take a negative form: neglect is an aspect of biography, as is casual or directed damage (e.g. as with the iconoclastic destruction of monuments following the Reformation). Changes in meaning may arise independently of any changes of form or location: e.g. a prehistoric cup-marked stone, or Pictish symbol-stone may be pressed into service where it stands as a parish boundary marker (Fraser and Halliday 2011) (Figure 70).

The biographical approach has been used extensively in the study of Scotland's early medieval carved stones, less so for other periods. The leading exponent is Hall who has conducted biographical studies of several stones, alone (Hall 2005a; 2011; 2012a; 2014; 2015a) and in collaboration with others (Hall *et al.* 2000; Hall *et al.* 2005). Other important biographical studies include Clarke's work on Pictish symbol-stones (Clarke



Figure 70: Successive phases of significance: pair of prehistoric standing stones at Nether Corskie, Dunecht, Aberdeenshire. The one on the right bears a prehistoric cup-mark and has been incised in the early medieval period with a pair of Pictish symbols. The stones stand near a three-way parish boundary (post-12th century).
Crown Copyright: Historic Environment Scotland

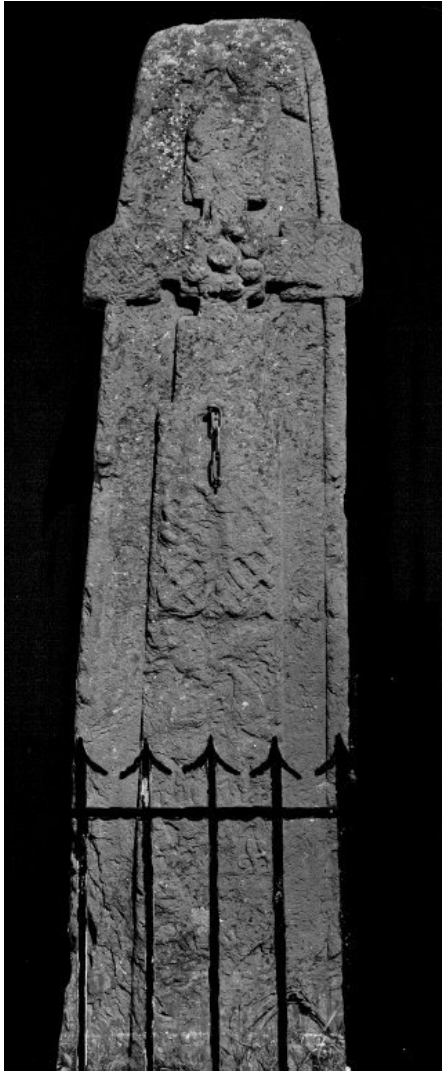


Figure 71: Pictish cross-slab from Fowlis Wester, Perthshire, fitted with iron 'jougs' for the restraint and public humiliation of petty offenders (post-Reformation).
Crown Copyright: Historic Environment Scotland

affect the preservation and recovery of material from the archaeological record, taphonomy yields insight into the pre-deposition state of material and how representative a recovered sample might be. Reverse taphonomy is, as the name suggests, a method of working backwards from recovered material, using an understanding of the forces which will have affected its preservation, to an improved understanding of its original condition and significance. The taphonomy of prehistoric rock art would have to take into account, for instance, patterns of destruction associated with agricultural improvement, preservation due to agricultural marginality, and recovery connected with forestry. The taphonomy of early medieval sculpture would require attention to its frequent re-use as building material in different periods. (See [Case Study 16: Monument Biography](#))

3.2.4 Landscape

Older studies have been justly criticised for focusing too narrowly on the stone itself with insufficient attention given to its physical setting in the landscape. Carved stones were often taken out of context and rarely recognised as being, to use modern parlance, 'site-specific installations' (Figure 72). Since the 1990s, however, the development of landscape archaeology and the growth in interest in materiality and biography has fostered a heightened awareness of the importance of the physical context of stone monuments—at a variety of scales from the immediate setting to the wider landscape, whether on a local or regional level. It should be noted that landscape archaeology refers here, not simply to the biophysical environment but to a cultural landscape theorized as a space composed of three aspects: the material, social and cognitive. In keeping with other humanistic social theories, landscape approaches model places and spaces as dynamic participants in past behaviour, viewing them not simply as a setting for, or artefact of, human action.

The landscape approach is inherently multi-disciplinary (Donside: Case Study 11). There are obvious intersections with archaeological science, which can assist in the recreation of the palaeo-environment through above-ground and below-ground archaeological investigations. Recent advances in, e.g. survey technology, digital scanning, data visualization, and Geographic Information Systems (GIS), have provided a number of tools to carved stone researchers. One such is viewshed analysis which is used to reconstruct the line of sight to and from a monument, and thus helps situate it within a defined landscape. Advances in recreating past routeways

2007), and Foster and Jones's work on the Hilton of Cadboll cross-slab (Foster and Jones 2008) (Monument biography: Case Study 16).

There is considerable overlap between biographical and materiality approaches (Section 3.2.2). Each investigates the on-going story of human interaction with monuments and the traces these may leave on the stone itself, e.g. in the wear patterns that may result when stones are repeatedly touched, rubbed, kissed as part of religious devotion, knelt on, smeared with substances, or chipped to remove relics/mementos. Similarly, the biographical approach is sympathetic with a landscape approach: there is a close affinity in studying the landscape palimpsest and the life histories of objects, indeed the two should be linked.

Biography has an important role to play in understanding reverse taphonomy. In archaeology, taphonomy (from the Greek *taphos*, meaning 'burial') is the study of what happens to material from the moment of burial (by any means, not necessarily funerary or even deliberate) until its discovery by archaeologists. By investigating the biological or cultural processes which

facilitate a better understanding of movement through a landscape and thus how monuments are viewed or otherwise interacted with.

Theories of materiality are of particular assistance in exploring how stones were experienced in combination with other elements in their environment, whether these are cultural or natural, physical or conceptual (e.g. other monuments, buildings, water-courses, boundaries). It also directs attention to the dynamic nature of environmental interaction, e.g. how the play of light across a carved surface highlights different aspects of carving at different times of the day or year (Figure 73; Gefreh 2015); or the influence of changing weather conditions (Pulliam 2013). Biographical approaches have fostered interest in secondary locations, and encouraged due attention to original sites in the many cases where stones have been moved. Attention to landscape and biography directs attention to how monuments may be conceived of as being in dialogue with existing and subsequently erected monuments around them. It thus encourages the study of assemblages, whether on the level of a single site, or a wider landscape. Emphasis on landscape enables the identification and understanding of factors, both environmental and social, which underlie movement, loss and other changes to carved stones—this data can be applied to identify potential threats before they happen and to strengthen legislation. It also encourages modern visitors to carved stones to experience them not in isolation but as part of a landscape (Faith in Cowal: Case Study 12).

Approaches such as these are effective at various scales and can be applied as usefully to a single site as to a slice of countryside. A graveyard, for instance, can be considered, as it is experienced, as not just a collection of individual burial monuments, but as a complex and integrated multi-element burial landscape in microcosm. Such a holistic approach seeks to understand the interconnected relationships of all physical features present within a graveyard (including carved stones individually and as an assemblage), and linked social behaviour, and their spatial, chronological and historical relationships to each other and to the site's setting.

In addition to, and intersecting with, materiality, biography and landscape, various other theoretical frameworks used in archaeology are available to carved stones researchers. Williams *et al.* 2015b and others have discussed carved stones as a 'mnemonic technology' through which societies 'do memory work' by remembering and forgetting past meanings. Other theoretical frameworks, e.g. agency theory, performance, and gender have been drawn on to a

lesser extent (for gender and the Ruthwell Cross see Farr 1991). The contribution of all is to open out new ways of thinking about carved stones, and to prompt new questions. (See [Case Study 11](#): Donside)

3.3 Recording

3.3.1 Traditional recording methods

'Traditional' methods of recording carved stones, including textual description, sketches, metric drawing and photography, have been in place since the end of the 19th century and remain of tremendous value today. (For discussion of drawing of early medieval see Ritchie 1997; 1998; Scott 1997; for comments on Romilly Allen's pioneering use of photography, see Henderson 1993a). The advent of digital recording technologies has augmented but not replaced these established methods which retain value, as demonstrated by a comparative study of metric drawing and digital scanning to record prehistoric rock carving at Ballochmyle, which vindicated the analytic value of



Figure 72: Carved rock face on citadel of early medieval fort at Dunadd, Argyll, (carvings include a Pictish-style boar, an ogham inscription, a hollowed footprint and a rock-cut basin), showing spectacular views of surrounding landscape. Crown Copyright: Historic Environment Scotland

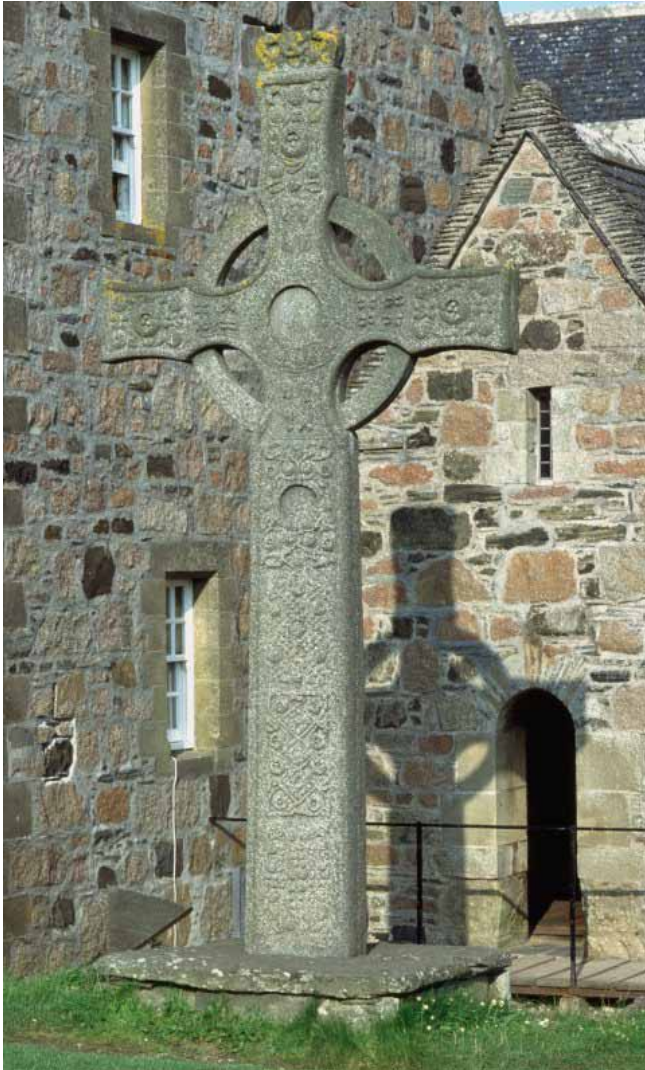


Figure 73: Replica of Crois Eoin (St John's Cross), Iona, in the monument's original setting, as its cruciform shadow passes over the tomb-shrine of St Columba. Crown Copyright: Historic Environment Scotland



Figure 74: Image of the Craw Stane, Rhynie, by Tom Gray, specially lit to highlight the incised carving of two Pictish Symbols. © RCAHMS (Tom and Sybil Gray Collection)

metric drawing. (See [Case Study 31: Metric Drawing](#))

Technological and economic constraints on the reproduction of images—which limited the number of images taken and presented, and the use of colour—have to a large extent been overcome by advances in digital printing and dissemination via the web. Black and white photography retains value due to the legibility of monochrome images of carved stone, and should not be set aside despite the ease and affordability of colour photography. Techniques of oblique-flash photography were developed in the 1970s and 1980s by RCAHMS photographers (Figure 11) and by Tom Gray (Gray and Ferguson 1997) and produced striking images and highly legible images of often worn carving (Figure 74). These are relatively low-tech and accessible to non-specialists and for this reason retain value, despite the superior facility of digital visualization methods to vary the position and nature of light sources ‘virtually’ after capture.

Archival photographs may have been shaped by artistic/aesthetic considerations (e.g. composition, lack of indication of scale, focus on carved surfaces), commercial potential (e.g. postcards and other material directed at the tourist market), or been driven by the desire to test new technology rather than simply record. Nonetheless they are of considerable value in reconstructing the biographies of stones, of gauging weathering and other damage, and of documenting the changing context of stones, especially their movement around and between sites. To a large extent this is also true of sketches, painting and etchings, if due allowance is made for ‘artistic licence’. Maps and plans of diverse types and various scales are an important source of information about the location (and movement) of stones within sites and landscapes, both directly and indirectly via stone-related place-names.

In addition to these non-contact methods, various contact methods of recording were developed or exploited in the 19th century. Conservation practice today would be to avoid potentially damaging contact methods, especially given the availability of non-contact digital techniques. However, these are expensive and require special equipment and technical knowledge. The low-tech alternative of a rubbing made with pencil or wax on paper may have a place in recording when carved surfaces are robust (Figure 75). Paper squeezes were popular in classical epigraphy, especially before the advent of cheap photography, and have occasionally been used in Scotland, despite less conducive weather conditions. Properly stored, paper squeezes are a durable 3D record of stone which would be suitable for digital scanning. Historic (i.e. 19th-century) squeezes might be of use for determining rates

of weathering where recent scans are also available. The same applies to plaster casts and other replicas made by creating moulds from the stones, which in Scotland became popular from the second half of the 19th century. The value of these early replication technologies is now being recognised (Foster 2013a; Foster and Curtis 2016). Squeezes and replicas may be the only record we have of the nature, form and materiality of a lost stone. While any contact recording method has conservation implications which mean it is not to be undertaken unnecessarily or without

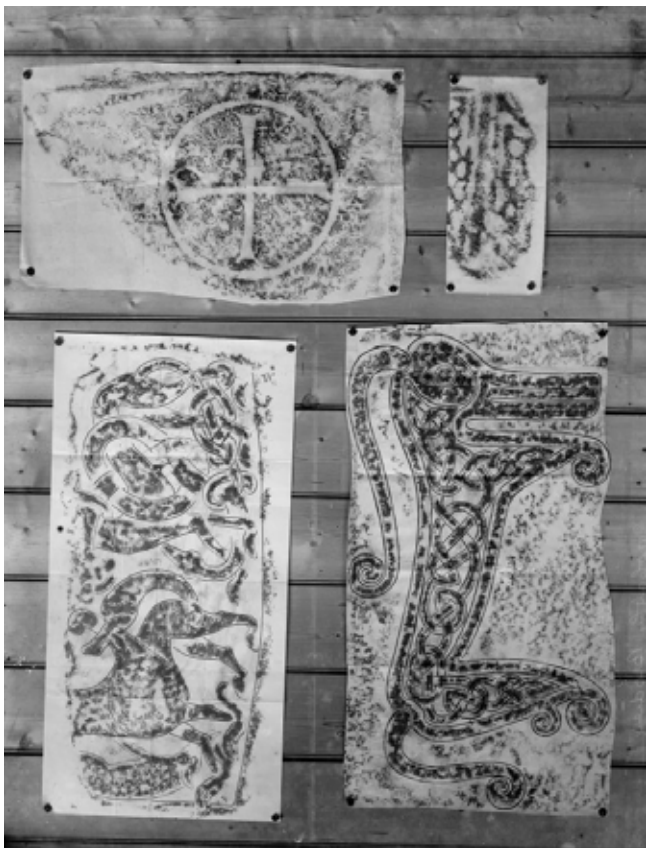


Figure 75: Selection of rubbings of Pictish sculpture made by John Romilly Allen in preparation for ECMS, 1890s.
Crown Copyright: Historic Environment Scotland

professional guidance, the low-tech/low-cost nature of rubbings and photographs provides opportunities for community engagement and crowd-sourcing of data which are harder to achieve with more specialist recording technologies.

3.3.2 Digital recording

Digital recording, particularly 3D recording, of carved stones in Scotland has become firmly entrenched in the canon of techniques applied by heritage and archaeology professionals over the last 20 years. This form of record can be seen as sitting on the same continuum as traditional forms of recording, text,

sketches, metric drawing and photography, while also raising its own unique opportunities and challenges. Importantly, a key aspect of these technologies are that they are non-contact and allow the creation of accurate three-dimensional records that replace historic contact techniques, such as the generation of plaster cast replicas. The techniques most usually thought of falling under the umbrella of digital recording are technologies that record surfaces in three dimensions and produce records that allow the visualisation and/or analysis of an object in apparent 3D. The techniques most commonly used are laser scanning (see Bryan 2015), photogrammetry (see Lerma *et al.* 2010), structured and white light scanning, laser line scanning and Reflectance Transformation Imaging (RTI, which while it does not give a true 3D record shares many features with the other techniques: Mudge *et al.* 2006; 2008) (Figures 76–78). There is extensive experience in Scotland in the governmental, commercial and higher-education domains of applying these techniques and consequently there is a solid body of knowledge regarding their practical application as well as the selection of the most appropriate ‘tool’ for the job.

The records produced via these techniques can be used to perform the same functions as traditional records, but have a number of advantages and offer the potential of completely new modes of analysis and representation. They generate versatile records which, in theory, are more easily distributed, more easily manipulated and have the capacity to be re-purposed in multiple ways e.g. to study surface condition (Condition monitoring at Ormaig: Case Study 37) or to create replicas. These records have particular utility in recording scripts or carving that lies over multiple or irregular surfaces, the comparison of current interpretations of designs with those in historic records, to distinguish original and later carvings and to distinguish between a stone’s natural and carved features. The surface recording resolution possible with some of these techniques also allows the capture of previously unrecordable (e.g. not visible to the naked eye) information and the analysis of surface using, e.g. metric groove analysis (Kitzler Åhfeldt 2013) and virtual lighting (Jones *et al.* 2015) (Imaging Techniques: Case Study 7). This extreme detail allows the discovery of the processes of the stone’s manufacture, including, potentially, the hand of individual artisans as well as subsequent changes in condition through weathering or other processes. Additional benefits of a true 3D digital record include its use as the basis for replication including through ‘3D printing’ (using either additive or subtractive methods), translating the digital into a form of physical replica with multiple uses including teaching, research and display (Robert the Bruce: Case Study 5). This new form



Figure 76: Heritage visualisation students being trained in the use of a Leica C10 laser scanner at Provan Hall, Easterhouse, Glasgow 2016. © GSA, Stuart Jeffrey



Figure 77: Preparing to control the ambient light. This is necessary to undertake photography for Reflectance Transformation Imaging. Lephinkil cup-marked stone near Glendaruel, Argyll and Bute. © CC-NC-BY the ACCORD project



Figure 78: Using a 'magic pole' telescopic rod to photograph hard-to-reach sections of a WWI memorial. Ensuring complete and overlapping coverage of sites or objects is essential for photogrammetric modelling. Colintraive, Argyll and Bute. © CC-NC-BY the ACCORD project

of replication raises a number of interesting issues that echo those arising from the growing awareness of the value of historic physical replicas both as analytical tools and important artefacts in their own right. Digital records, through their amenability to multiple forms of manipulation, also allow for the investigation of historic colour, likely original lighting conditions, and the 'virtual' placement of stones in their original landscape setting (Cradle of The Scots: Case Study 19).

(See [Case Study 5: Robert the Bruce](#); [Case Study 7: Imaging Techniques](#); [Case Study 37: Condition Monitoring at Ormaig](#))

There is now an ever increasing body of digital records much of which would support meaningful further analysis, re-use and re-tasking to build on the objective of their original production. This highlights one of the key structural weaknesses that impacts on the reuse of this data. This relates to the management and dissemination of digital records. There is no centralised inventory of 3D records that clearly indicates what has been recorded, how it has been recorded and what formats the data are currently in. This leads inevitably to the potential that work is duplicated, that the opportunity for comparing records generated at different times is lost, as is the potential for thematic studies that draw together records generated from multiple fieldwork events. Underlying this problem are well-recognised issues of long-term data preservation (Richards *et al.* 2013; Niven *et al.* 2014), the use of standardised metadata and paradata (see the London Charter; Bentkowska-Kafel *et al.* 2012; Jeffrey 2010) as well as multiple issues that arise with data sharing under confusing and/or restrictive data licensing regimes. The affordable long-term curation of digital data in all forms remains a thorny issue in multiple commercial, governmental and academic domains, but is particularly acute for high-volume 3D data which often transitions through multiple-file formats, open or proprietary, during the workflow to the final product, raising along the way a chain of, sometimes difficult, decisions for the archivist. As a result very little 3D content finds its way into a Trusted Digital Repository and consequently may be undiscoverable and/or unusable in a relatively short timescale. In addition to the above, there is the broader issue that even where 3D digital datasets are actively curated for future use, they are almost always archived as discrete items, rather than being part of a wider body of information and without mechanisms linking them to broader research material. This situation has arisen at least in part because existing recording strategies are mainly conservation and communications-led, rather than research-driven. Conservation priorities, as opposed

to research, tend to be piecemeal rather than thematic and comprehensive. Although, both the ambitious HES Rae project (HS Focus Magazine 2012) and the Scottish Ten project are comprehensive with regard to the legal status of their targets, covering HES properties and Scottish UNESCO World Heritage Sites respectively. Furthermore there remains a sense that current digital recording practice is still being technically led rather than being developed or exploited with the needs of researchers or public audiences in mind. In part, this is because of the difficulty expert recording practitioners and non-technical academics have in communicating at the same technical level. There is both a skills deficit among researchers and an absence of clearly framed research questions, each of which are contributory factors to this communications barrier. Data capture and processing does not tend to include academic support despite a general understanding that it, as with all recording, is at some level a subjective act. Dialogue between technical and academic specialists could enhance the utility of the subsequent datasets. Such co-working could also ensure adequate resolution for research questions and at the same time help refine new research questions. The framing of new research questions is also undermined by the lack of knowledge about what work has been done and what records are available, as discussed above. However, it could also be said that data is not being generated in a cohesive manner because the research community is not saying ‘this is what we want to know’ clearly enough. The skills gap between academics and technologists may also explain why there has to date been limited research on digital records of carved stones in their reconstructed landscape settings, subject to different seasons, lighting etc. Although the potential of digital recording for individual stones is recognised, we still need to explore more fully the value of what ‘virtual re-contextualisation’ might deliver.

While there is not yet a seamless integration between the deployment of digital recording technologies and research-led approaches, work with the public and communities of interest through these technologies holds out notable potential as means of engagement (Wemyss Caves: Case Study 36). There is increasing reflection on the nature of the relationships between community groups, digital heritage professionals and the outputs they have created. Such work is indicating that some of the social values invested in the original object can be translated to or recreated in the process of replication and 3D model capture (Jeffrey *et al.* 2015). This is contingent on a number of factors but points to a key aspect of the digital record from this perspective as being the process itself, who does it and why, as much as the actual output files. (See **Case**

Study 6: Community Co-production)

There remains some anxiety over the potential for digital recording to become ‘a double-edged sword’. This relates to outmoded ‘preservation by record’ arguments and the potential that more easily generated accurate physical records (e.g. via 3D printing or other computer-controlled production methods) could be deployed at the expense of conserving physical remains or used to justify rather than simply mitigate the re-location of monuments from their original context and communities. This anxiety most likely arises from some of the grander claims made when the technologies were in their infancy and currently digital recording is considered most useful for analysis, re-visualisation, enhancement or perhaps providing forms of ‘remote access’ for those not able to physically visit sites. As with all forms of recording, analogue or digital, the final records have multiple uses, but are not considered as surrogates for the original. However, as exemplified by community co-production (Community co-production: Case Study 6) the recording process itself is not a neutral activity and does have implications for how the original is subsequently perceived both by heritage professionals and the multiple forms of community in which the original is situated.

3.4 Organising Data

3.4.1 Taxonomy—labelling types of stones

The effective classification of material—the recognition and exposition of the order within its diversity through the definition of recognised types and sub-types and the devising of accurate terminology to label them—is a fundamental basis of research into material culture. Accurate and rigorous classification (or ‘taxonomy’) depends not only on the recognition of similarities and distinctions between items but, crucially, also on an informed understanding of which traits are significant (so it is value-based: see Section 4.3.1). Classification is thus inherently analytical. The multi-disciplinary nature of carved stone research raises special problems for effective taxonomy as different disciplines (e.g. art history or archaeology) may have different ways of referring to the same material. Distinctions which are relevant to one discipline may be less so to another. Terms may have different meanings in another discipline (e.g. ‘inscribed’) or not be understood at all (e.g. ‘orthostat’). Furthermore, terms which have popular currency may be too imprecise for scholarly use, while terms used by researchers may have no resonance with the general public (e.g. ‘cross’ versus ‘cross-slab’, ‘cross-marked stone’, ‘free-standing cross’,

etc.).

Classification is not an arid academic exercise. On the contrary, taxonomy inevitably shapes thinking as it focusses attention on, or diverts it away from, certain types of material, or aspects of a particular type. It thus has a profound effect on which kinds of material are considered together and which are not, indeed which kinds are considered at all. The contrast in the level of attention given in Ireland and in Scotland to what appears to be a shared class of material but which is referred to by different labels—‘bullauin’ and ‘rock-cut basin’ respectively—is a case in point (Bullaun stones: Case Study 2). It also raises the question of the extent to which it is possible and desirable to align the classification of Scottish material with the terminology used of the same types of material in other countries.

The detrimental effect of a no-longer useful taxonomy is illustrated by the case of the deceptively clear and simple three-class system for analysing Pictish sculpture set out in *ECMS* (Allen and Anderson 1903). The clarity and simplicity of the system, and the authority of its creators, has led it to dominate discussion of Pictish sculpture for over a century. Its shortcomings have been increasingly highlighted by expert scholars (Henderson 1993a; though for a partial defence see Clarke 2007), yet general academic and public writings continue to perpetuate it. It elevates the presence or absence of Pictish symbols over other, arguably more relevant, criteria, resulting in a distorted impression of the material: for instance by splitting what is arguably a unitary type—the upright cross-slab—into two sub-groups based on whether or not they bear symbols. Conversely, by lumping together all non-symbol-bearing relief sculpture into the overly heterogeneous Class III, the significance of this diverse body of sculpture was obscured. Allen and Anderson’s scheme had no place for simple, cross-incised stones and this numerous and important type was largely omitted from *ECMS*. It was not until Henderson’s pioneering work in the 1980s, and her extension of the Allen and Anderson scheme to a new ‘Class IV’ label, that these stones were properly recognised as a category and integrated into research (Henderson 1987a).

Classification is not a once-and-for-all activity—as understanding evolves, so does the taxonomy based on it, and as understanding changes existing terminologies may need to be refined, or even abandoned altogether. It may take time before such innovations are accepted within a discipline, whether from inertia or because new interpretations are actively contested. Even when scholarly consensus is reached this does not necessarily ensure speedy adoption by wider audiences, as the dogged longevity of the *ECMS*

system demonstrates. The tension between keeping abreast of the latest terminological developments and sticking to authoritative terms that are widely understood is particularly acute for resources (such as Canmore) which have a wide range of users. Faddish or controversial systems which lack widespread support within the scholarly community must be avoided, yet, as the *ECMS* example above shows, simply because a system is long hallowed, does not guarantee its usefulness any more than does its novelty. One of the advantages of online resources over physical publications is that, in theory, they can be readily updated to take account of evolving classifications and terminologies, and items can be cross-referenced with multiple tags to ensure that they can be found using a range of alternative terms (and these can be embedded to avoid them cluttering up an entry). In practice, however, resources for this level of indexing are currently lacking.

Existing classifications and terminologies have evolved organically within period specialisms and generally represent the cumulative efforts of a number of scholars, sometimes over generations (N.B. study of past classification systems can be a useful means of exploring past value).

Only exceptionally are they the result of initiatives by an individual or committee to set out an over-arching schema (typically in association with the preparation of a corpus or major catalogue). Earlier taxonomies tended to prioritize the content of the carving rather than a more archaeological approach prioritizing form and function (e.g. the classification of Iona slabs on the basis of form of cross-motif carved in them (RCAHMS 1982) versus a classification based on monument form (as a proxy of function) and geology (as a proxy for date) (Forsyth and Maldonado in prep.). The complex, multi-faceted nature of carved stones, and the diversity of approaches to their study means that there is unlikely to be a single, perfect taxonomy which satisfies all users. Different systems will have their merits depending on the purpose to which they are put. The key is rather to be explicit about the principles of classification, to use labels consistently, and not to diverge from existing systems without clearly articulated justification. Similarly, cumbersomely long-winded labels which are accurate but inelegant, or which strain normal English usage, are unlikely to gain support.

The long-standing challenges of classification and labelling have taken on a new dimension with the advent of digital technology. Digital databases such as Canmore have immense potential for kinds of research which was simply impossible in the days of solely print publication, but problems of labelling

and indexing constitute a barrier to realising that potential in full. The historic accumulation of data in these resources means there are inconsistencies in spelling and hyphenation in the database which can affect search results (e.g. searches on the variants ‘ogam’ and ‘ogham’, both of which are in scholarly and popular use, bring up different results). Technological improvements in ‘fuzzy’ searches may alleviate this, but some tidying up of data is necessary (see Canmore upgrade: Case Study 30; Reflections on Terminologies: Case Study 28). In some cases the terminology used is not that of the scholarly community, or brings up perverse results (e.g. ‘gravestone’). This is a non-trivial problem which nonetheless must be addressed before Canmore can be used effectively to search for categories of carved stones. Scholars typically devise or refine terms in an *ad hoc* and intuitive way to meet a particular research need, and terms may not be conceived within an overarching hierarchy or with an awareness of established principles of classification and terminology. A collaborative approach—involving scholars, IT specialists, archivists and non-academic end-users—is necessary to establish agreed principles, in consultation with cognate bodies elsewhere. A project of this nature is likely to be a substantial undertaking but it has the potential, not only to greatly enhance the kinds of research that is currently undertaken but also to facilitate new types of research based on data searches which were hitherto unthinkable. These terminological issues are not only a concern for Canmore users, but also beset those who search for carved stones related items and new discoveries in the indexes of publications such as the annual *Discovery and Excavation in Scotland*, and *Proceedings of the Society of Antiquaries of Scotland*.

Two final points: in addition to English language taxonomies and terminologies generated by modern scholars, due attention should be directed to nuances of meaning enshrined in traditional terms relating to carved stones in Gaelic (e.g. clach, leac, coirthe) and Scots (e.g. lair-stane, bore stone). Often these are preserved in place names which, in addition to yielding insights into past understandings of carved stones, can sometimes provide important evidence of the prior existence of lost stones or the original/previous location of moved stones. (See [Case Study 2: Bullaun Stones](#))

3.4.2 Names—labelling individual of stones

A separate issue from the labelling of recognised types of monuments is the naming and numbering of individual stones, and the lack of recognised

conventions for doing so. With the possible exception of Roman stones, which are typically referred to in the scholarly literature using one of two authoritative numbering schemes enshrined in major corpora, comprehensive numbering schemes are not much used and there is a lack of consistency in naming stones (variously from the name of the field, nearest farm, nearest settlement, or the parish). Stones which have been moved may be referred to by the name of their findspot and/or the name of their current location. The extent to which traditional names for stones are respected and used varies (e.g. the Pictish cross-slab referred to as, alternately ‘Drumduro’/‘Chapel of Garioch’/‘The Maiden Stone’). In some cases scholars have coined memorable names for crosses, e.g. ‘Constantine’s Cross’ for the Dupplin cross, but this can cause problems if the invented nature of such names is lost sight of, e.g. the invented ‘St Oran’s Cross’ in contrast to the traditional names for the crosses of saints John, Martin and Matthew on Iona.

Where there are multiple stones from a single site, their numbering may follow one of several logics (e.g. order of discovery/publication, distance from core of site, size/degree of completeness, order of museum accession) or be effectively arbitrary. Lost stones may or may not be included in numbering sequences, and problems also arise when separate numbers are assigned to fragments of what is, in reality a single monument. This lack of care and consistency in numbering and labelling schemes and the perpetuation of competing systems can lead to confusion regarding the identity and numbers of stones at sites, resulting in unwarranted omissions or duplications. The British Academy’s *Corpus of Anglo-Saxon Sculpture* usefully laid out principles for the consistent naming and numbering of sculpture and these have been followed by the Welsh corpus (i.e. parish name, site name, number by order of discovery; also separately numbered within county). If applied consistently, such a system could be usefully adopted for Scotland’s early medieval sculpture and, perhaps with modifications, for other periods also. Canmore is in the process of moving from an entirely site-based system (in which multiple carved stones at a single site were registered collectively under that site) to one in which individual early medieval carved stones are each assigned their own entry (see Canmore upgrade: Case Study 30; Canmore upgrade example: Case Study 4). This will, in effect, give each early medieval carved stone a unique reference number which, although too cumbersome for ready labelling, will doubtless prove useful in keeping track of the 2000+ stones in this category. More recent categories of carved stone are perhaps too numerous to be individually catalogued in this way, though it may be practical for some sub-

categories.

3.5 Datasets

3.5.1 Handlists and corpora

Typically, a handlist provides a simple listing of basic information on all the stones of a specific period and/or monument type within a defined geographical area. They may or may not be illustrated (e.g. Henderson 1987; Fraser 2008). They are useful in establishing the extent of a body of material and the research already conducted on it. These can usually be produced rapidly but possess significantly less detail compared to a typical corpus and do not contain any analysis.

A corpus is a complete survey representing the state of knowledge at the time of its compilation. It groups and categorizes material, typically through an advanced study of design and style (as opposed to materiality or other values). They tend not to consider context and landscape in any detail. Examples include Steer and Bannerman 1977; Allen and Anderson 1903. The strength of most corpuses is that they provide high quality, detailed and richly illustrated information. Data is presented in a consistent format, usually through a degree of comparative analysis. However, once completed, published corpuses are not easily revised or updated with new information. Digital publication, as an online resource, provides opportunities for regular refreshing of the data aiding comprehensiveness, and increased accessibility.

Historic surveys are useful as records of missing stones but there may be a finite amount of surviving data available to (re)record and (re-)analyse existing corpuses. There may be the perception that a subject area is deemed to have been 'done', which can stifle subsequent scholarship for a generation, as claimed for *ECMS* (Stevenson 1981a, 175). It is not always clear as to what questions were being framed by the data, however, the degree of consistency contained within most corpuses means there are still valuable opportunities for reassessment with new perspectives. In some cases there is a ceiling on studies that is likely only to be broken as the result of new technology to study design and materiality.

To date, many existing corpuses and thematic datasets (see below) have been driven by a single disciplinary approach, usually art historical. There are strong opportunities for such studies to be multi- and inter-disciplinary in character to enrich analysis and understandings.

There has been a bias towards documenting early medieval, rather than later medieval and modern, stones (e.g. Allen and Anderson 1903; Fisher 2001; see Section 2). However, there are some notable early medieval omissions, for example Anglo-Saxon sculpture in southern Scotland is excluded from the British Academy's *Corpus of Anglo-Saxon Sculpture* (except as comparative material).

3.5.2 Thematic datasets and studies

Thematic studies of carved stones include several different types of record sets. They can be incorporated in studies of other types of heritage assets such as church buildings, e.g. Scottish Church Heritage Research Places of Worship in Scotland project and the Corpus of Scottish Medieval Parish Churches, or graveyards, e.g. Scottish Association of Family History Societies Graveyards Inventory. In these cases information of carved stones may be difficult to access and not particularly detailed.

Thematic studies also include records only of carved stones but the method of compilation means they are not intended to provide complete coverage or drawn-together analysis (e.g. Willsher and Hunter's 1978 study of 18th-century gravestone carvings). In other cases thematic studies may look at just one facet of a carved stone design but intend to reflect the state of current knowledge in this area (e.g. Davidson's 1977 inventory of 17th-century gravestones in Angus and Mearns). As with corpuses, thematic datasets may not be easily updated or refreshed if published in paper form. (See [Case Study 3: Graveyard recording](#))

3.5.3 Audits

The scale of an audit is significant, involving tracing surviving monuments, as known through existing records as well as new discoveries not included in sources such as Canmore. Audits are often used to establish condition and to identify what has been lost. So far, there has been no national audit (and only limited regional examples) to measure and characterise what exists, or has been lost, on the ground. The scale of architectural, later medieval (with the exception of funerary monuments) and early modern carved stones in particular are an unknown quantity.

Without any form of overview, it is impossible to identify gaps in current knowledge and begin to fill these in strategically. While we know anecdotally that carved stones are a resource under threat, such as loose and vulnerable stones, particularly at church sites, the lack of an overview means we cannot understand the

nature of their vulnerability in terms of the relationship between different types of carved stones, stewardship issues and the rate of loss. With an audit it becomes possible to assess both condition and risk, and values/significance to help to target the finite resources available for maintenance and repairs more effectively. This is especially pertinent in the case of graveyards (see Graveyard recording: Case Study 3).

3.5.4 Canmore

Canmore is Scotland's principal heritage dataset, representing over a century of accumulated information. Its key strengths include regular update of content, the facility to crowd-source information, inclusion of images for many entries and its design for use by a broad user-base spanning researchers, heritage managers and the wider public.

As a database, Canmore does not present any analysis of information that it collates and indexes from different sources but is a valuable 'building block' resource for researchers. However, the level of detail within Canmore (in common with other Historic Environment Records (HERs) and statutory list compiled by Historic Environment Scotland: HES) is variable and there is no standard format or terminology to describe the different types of carved stones. This variability coupled with the limited number of search terms considerably limits the database's search capabilities, particularly for groups of records (see Canmore upgrade: Case Study 30; Canmore upgrade example: Case Study 4).

Canmore does not include information on monument condition, ownership or statutory designations. Nor is it directly linked to other datasets containing such information, although the portals of PastMap and Scotland's Places provide access to HES statutory lists, HERs, National Library of Scotland (NLS) maps and selected records from the National Archives of Scotland (NAS).

There are records kept (e.g. of condition, such as HES monument warden reports) that are not publicly accessible. There are lists of monuments classified for designation purposes (HES Decision Portal etc.), but the schemes used for this are very simplistic and outdated. Some information is downloadable in GIS format and usable for those with the skills do to so. The fact that these databases do not 'talk' to each other, and, especially with Canmore (which lists all sites), is a hindrance to research. So, even if Canmore terminology is updated, it still cannot be readily interrogated to establish what of these categories is designated and how. ((See [Case Study 30](#): Canmore upgrade; [Case](#)

[Study 4](#): Canmore Upgrade Example)

3.6 Scientific analysis

Scientific analysis of carved stones is increasingly contributing to carved stone study in multiple ways including conservation techniques, surface analysis and stone sourcing. Stone is vulnerable to deterioration and decay under the influence of a variety of physical and chemical agencies. 'Weathering' encapsulates a range of processes, driven by moisture movement, driving rain, freeze-thaw cycles, salt crystallisation and chemical attack from pollutants. Biofilms can engender and mediate these processes, having a significant impact on the surface of carved stone, including staining, alteration of the movement of moisture, and physical stresses on microstructure. Longer-term climatic variability also brings about change to the physical conditions affecting the historic environment, for instance increased rainfall exacerbates problems caused by water ingress and increases both macro- and microscopic biological growth. In conservation contexts, responses to these forms of material degradation often result in steps to measure, record, protect, and/or repair carved stones (e.g. Sheltering monuments: Case Study 17). There is a long and continuing tradition of regular repair and maintenance using traditional craft techniques and materials). However, the development of heritage science during the 20th century has led to the introduction of new techniques for measuring change, analysing materials, protecting them from decay, and consolidating vulnerable components. For instance, petrographic analysis is used for characterisation and the determination of provenance and biocides for the management of biofilms. As a result of these techniques, the nature of carved stone, and their dynamic relations with their physical environments is altered to some degree, whether directly or indirectly. For instance, rates of weathering can be modified and signs of wear and age removed.

Science-based materials analysis techniques provide information on the physical and compositional condition of stone when carved, as it changes through its lifespan and what its condition is now, both on the surface and internally. Some methods of analysis which use specially developed statistical-based algorithms to isolate patterns in the worked surface have the capacity to reveal information about the stone-carver (Kitzler Åhfeldt 2013), possibly their place of work, their support workers and clients, the nature of tools used in the carving process and the procuring and movement of stone.

As historic and prehistoric carved stone is highly valued, direct sampling for laboratory analysis is limited or impossible. This leads to the application of visual characterisation, classification and condition assessment methods, using descriptive ‘field’ methods and terminologies derived from the geological and physical geography disciplines (see Geissen *et al.* 2014). Increasingly, a range of instrumental analytical techniques are applied on the rare occasions that materials can be transferred to the laboratory. There are also variants of many methods available for non-destructive testing *in situ*, removing the need for destructive sampling of materials (or on whole objects in the laboratory, but without destructive sub-sampling). Provenance discrimination and material condition assessment requires compositional, mostly mineralogical analysis using combinations of techniques such as thin section petrography, X-Ray Diffraction, X-Ray Fluorescence, magnetic susceptibility, nuclear magnetic resonance, FTIR spectroscopy, Raman spectroscopy and quantitative colour measurement. These investigative techniques are being brought together into schemes to assess the risks to and vulnerability of stone to changing environments, including changing conservation practice and management regimes. (See **Case Study 8: Science Value and Material Decay**)

There is an increasingly strong working relationship between archaeologists and geologists and other scientists in the heritage sector and as a result an excellent understanding of Scottish rock micro fragments is developing. This leads to a continuing refinement in the techniques which allow carved stones to have their original source in the landscape pinpointed. (See **Case Study 9: Magnetic Susceptibility**)

3.7 Ways of working

3.7.1 Research environment

The advent of digital technology and widespread access to the internet have had a transformative effect on how research is conducted, as new technologies continue to facilitate new ways of working. Collaborative working is becoming ever easier thanks to the internet which supports ready sharing of data, and easy communication. Open Access publishing and online databases such as Canmore (Section 3.5.4) are a great boon, although commercialization of data and images remains a barrier to research (see Section 6.2.8). New digital technologies hold out the promise of exciting new techniques and approaches but expectations will be thwarted unless there is effective dialogue between



Figure 79: Historic Scotland Conservation Group using X-ray fluorescence to try to identify a white coating on the St Andrews Sarcophagus.
© Sally Foster

‘knowledge people’ and ‘techies’ concerning project design and implementation.

Changes in the way in which university research is funded has resulted in a multiplication of schemes, each with specific criteria, which inevitably shape research projects, suiting some better than others. Some funding sources, e.g. HES, are bound by modern national boundaries. Others have specific agendas, e.g. European Union funding requires international cooperation with at least two non-UK partners. Other priorities appear more transient, with preferences at different times for, e.g. database projects, interdisciplinary projects, projects with Knowledge Exchange elements, or the inclusion of Early Career Researchers.

Within UK Universities, institutional concern to score highly in periodical national research assessment exercises (e.g. REF) can result in pressure on academics to prioritize certain kinds of research activity over others. Although one positive by-product of the current REF emphasis on ‘Knowledge Exchange’ between university and non-university sectors, and on the ‘Impact’ of research on society, is the encouragement of academics to give greater attention to community engagement, and collaboration with heritage bodies. There are systemic challenges in achieving the latter

as a number of heritage bodies, including HES, shift from a system of relying on in-house experts to outsourcing academic expertise on the model of freelance contractors.

Reconciling the different timescales to which heritage bodies and the Academy work can be problematic for professional academics who juggle research with teaching and who cannot take research leave at short notice. Another issue is that levels of scholarly rigour required by academic publication may go beyond those required for heritage management purposes. The laudable aim of getting research findings quickly into the public domain may be in conflict with pressures on academics to focus on major outputs and publish in peer-reviewed outlets. Dissemination of new research via the web in advance of full publication (e.g. Iona website) may be in conflict with current conventions regarding academic intellectual property, although rapid changes in digital publication and the use of the internet and social media are challenging norms in this area. While these issues remain to be fully resolved, the challenges are very much worth overcoming as there are many mutual advantages to closer working between heritage bodies and the Academy.

3.7.2 Multidisciplinary, interdisciplinary and transdisciplinary working

By their very nature, carved stones are of interest to scholars from a wide range of academic disciplines, and each of these branches of knowledge brings to the subject its own approaches, techniques and expertise. How best to combine knowledge from different disciplines to gain maximum understanding is an increasing challenge as the growth of knowledge and the introduction of new technologies leads to ever narrower specialisation.

There are several different modes of collaboration between disciplines. The most straightforward is the multi-disciplinary approach whereby researchers work in partnership with others in different disciplines to tackle different aspects of a problem. Researchers remain within their own disciplines and work in parallel. A good example of a multi-disciplinary approach to carved stones research is Edwards' corpus of early medieval inscribed and sculptured stones in Wales (Edwards 2007; 2013). Co-ordinated by a field-archaeologist/field-epigrapher with art-historical training (who is thus a multidisciplinary researcher herself), it also involved expert contributions from a geologist, a linguist, a palaeographer and an illustrator. Other multi-disciplinary approaches to carved stones

might, for instance, involve art historians, genealogists, digital modellers, archaeological illustrators or conservators (see *Disciplinary collaborations: Case Study 18*).

Multi-disciplinary working can be a highly effective means of pooling expertise but one hazard with this mode is that the experts often work in isolation on separate aspects of the problem contributing a 'specialist report' which is seen only by the project leader, and remaining unaware of the findings of the others until after publication. This can result in lost opportunities to share findings in advance of publication and to feedback to one another while research is underway (although, admittedly, such interaction can be challenging to coordinate). In broader terms, working in parallel does not necessarily foster understanding of other disciplines and what they might contribute to specific problems. By working solely along established disciplinary lines, multidisciplinary projects run the risk of merely answering existing questions rather than generating new ones. A particular problem of carved stones research is the extent to which recording (whether that be drawing, photography or digital scanning) is done by technical specialists, who may have limited knowledge and understanding of the material, working separately from the researcher. The costs and logistical challenges of getting the researcher and recorder in the field together may be prohibitive but when they can work closely together, both record and analysis are generally enhanced (see the Irish Ogham in 3D project).

A more intense form of disciplinary collaboration is the interdisciplinary mode, in which participants from different disciplines work together more interactively. With interdisciplinary working, there is a merging of approaches from both disciplines, in contrast to multidisciplinary working in which researchers stay within existing disciplinary boundaries. Interdisciplinary projects are useful in answering questions which cannot be adequately addressed within existing disciplines and tend to emphasise new knowledge that exists between or beyond existing academic disciplines. Working across disciplines in this way can be more challenging and requires greater attention to communication between/among researchers throughout multiple phases of the research process.

Interdisciplinarity is highly relevant to carved stones which demand approaches which, for instance, fall between archaeology and art history. Increasing attention to materiality (see Section 3.2.3) is driving new interdisciplinary consideration of, for example, the ways in which material properties of a particular

stone enable and constrain the way in which it has been carved, drawing on understandings derived from geology, archaeology, art history, and a practical understanding of stone-carving. Another example relevant to carved stones is the emerging interdisciplinary field of ‘graphicacy’ that seeks to understand the communication of conceptual information by means of non-figural graphic devices.

Interdisciplinarity is about innovations that integrate and move beyond discipline-specific approaches, whereas transdisciplinarity refers to the transfer of modalities (techniques, theories, approaches) from one discipline to another. Researchers continue to work within their discipline but import innovations from other fields. A number of theoretical approaches developed in prehistoric archaeology have been transferred to the study of carved stones of later periods (Gondek 2007). An example of this is phenomenology, which emphasises the sensory experiences of those interacting with archaeological material (Tilley 1994; Tilley and Bennett 2004), and which originates in philosophy and social theory. An example of transdisciplinarity on a more practical level, would be the transference of techniques and approaches developed on a landscape scale (in connection with LiDAR topographical survey) to surface analysis of carved stones on a much smaller scale (Kitzler Åhfeldt 2013).

Finally, cross-disciplinary working, results in aspects of one discipline being explained in terms of another in order to yield new insights. Thus a researcher in a discipline which does not usually consider carved stones (e.g. mathematics) might apply approaches established in that discipline to explain aspects of it within the terms of that discipline (e.g. geometric ornament, such as interlace). Such approaches can yield insights of interest to carved stones researchers, even if the study is not directed at them. An example of cross-disciplinary work relevant to carved stones is Lee’s application of statistical techniques established in information theory to Pictish symbols (Lee *et al.* 2010, but see Sproat 2010).

Despite the obvious potential of the kind of multi-disciplinary approaches outlined above, enthusiasm for them should not be at the exclusion of single disciplinary approaches which still have much to contribute to the study of carved stones. (See [Case Study 18: Disciplinary Collaborations](#))

3.8 Research recommendations

(N.B. the order of the following recommendations is

not meant to imply an order of priority or importance)

See also Section 2 for background to these research recommendations.

3.8.1 Principles

1. Align recording campaigns to support research on specific themes/bodies of material (Sections 3.3, 3.7).
2. Take full advantage of any opportunities arising from the (re-)display of stones to record and analyse (Section 3.7).
3. As a matter of course if something is going to be scanned, what research questions might be asked of it? (Sections 3.3.2, 3.7)
4. Develop an agreed terminology and taxonomy to describe, recognise and group carved stones for each period (Section 3.4.1).
5. Research traditional names, folk practices, traditions, and stories associated with stones (Sections 3.2.3, 3.4.2).
6. Do not neglect fragments (Section 3.2.3, 3.3).
7. Improve data management and access (Sections 3.3.2, 3.5, 3.7.1).
8. Make data sets and research results openly and freely available, preferably via the web (Sections 3.3.2, 3.5.4, 3.7, 6.2.8).
9. Focus on the future development and use of non-destructive and non-invasive methods (Section 3.6).
10. Investigate the impact of carved stone studies on research, teaching and conservation communities (Sections 3.2.1, 3.3, 3.7).
11. Acknowledge that recording cannot be separated from analysis (Sections 3.2, 3.2).
12. Recognise the value of established discipline-based methodologies and continue to pursue these where appropriate (Section 3.2).
13. Fully utilize new analytical frameworks (Sections 3.2.2, 3.2.3, 3.2.4).
14. Improve understanding of stone-working techniques through: historical and ethnographic study of stone carving, physical analysis of worked stone and creative experimental carving techniques (Sections 3.2.3, 3.7.2).

15. Understand who was producing carved stones and how this was achieved (social and logistical aspects as well as technical, i.e. procurement and transport of stone, organization of work and training, relationship between carvers and commissioners, etc.) (Section 3.2.3).

3.8.2 Problems

1. Lack of awareness of potential of carved stones to address existing research questions and to help frame new ones (Section 3.2).
2. Lack of communication between research, teaching and conservation communities (Section 3.7).
3. Availability of scientific data: lack of central record of what scientific analysis has been conducted and where to access results (Sections 3.6, 3.5, 3.7).
4. Lack of central record of what digital recording has been conducted and where to access records (Sections 3.3.2, 3.5, 3.7).
5. Limited accessibility of scan data. The problems are both technical (software compatibility, stability of data, format), and institutional (lack of sharing) (Sections 3.3.2, 3.5, 3.7).
6. Lack of uptake of new theoretical approaches available to frame new research questions (Section 3.2).
7. Lack of broader awareness of technical knowledge built up over the last 20 years and of the potential of technology to help answer research questions (Sections 3.3.2, 3.5, 3.6, 3.7).
8. Lack of interdisciplinary working within academic community (Section 3.7.2).
9. Difficulties in engaging more fully with the diversity of existing communities outside Academia to ensure the most fruitful interdisciplinary collaboration (Section 3.7.2).
10. Scale of resource. Some categories of carved stone are so numerous that comprehensive recording initiatives are unfeasible. How then to prioritize? How to ensure consistency of data/approach if recording is done piecemeal? How to ensure that records can be made available? (Sections 3.3, 3.5)
11. Lack of alignment between conservation- and heritage-led research (which may be very case-specific, and funded and conducted on much

shorter time scales) and more strategic research agendas (Sections 3.6, 3.7.1, 3.7.2).

12. Lack of awareness of collaborative opportunities between researchers using the same datasets/or researching similar themes in relation to different data sets (Section 3.7.2).
13. Recording biases—some categories of carved stones are well recorded, others overlooked; cut off dates, geographical restrictions including national boundaries (Section 3.3).
14. Recording driven by technological developments rather than research needs (Sections 3.3, 3.6).

3.8.3 Practice

1. Conduct research into the biographies of stones using the physical evidence of later interventions and through references to stones in historical records (Section 3.2.3).
2. Respect traditional names for stones, where these exist (Section 3.4.2).
3. Increase awareness of Scotland's heritage of carved stone in art education (i.e. art schools) to encourage creative responses (not replication and conservation) (Section 3.7.2).
4. Develop integrated digital records that directly incorporate and/or directly reference other important datasets, technical, social, value, historic records etc. (Sections 3.5.4, 3.7.3).
5. Establish a forum for a meeting place between different disciplines and experts in different periods (Section 3.7).
6. As with digital recording, there is a strong perception that a national data archive comprising the nature, location and results of scientific investigations would be an extremely beneficial touch (Section 3.5).
7. To this end create a central corpus with Building Information Modelling (BIM) characteristics suitable for cross-disciplinary data sharing. This should integrate scientific data, 3D recording, 3D/moving images. Link with theorising visualisation and other monument and site information mapping. Test the design to ensure it can support analysis of research questions identified in ScARF (Sections 3.5, 3.7).
8. Record fully before (re-)display (e.g. by

- photographing/scanning the back/underside of stones or portions obscured by display) (Sections 3.3, 3.7).
9. Conduct scientific analysis before (re-)display (e.g. take samples at point of restoration/conservation) (Sections 3.6, 3.7).
 10. Maintain up-to-date bibliography of new publications relating to carved stones (Section 3.2, 3.6).
 11. Compile bibliographies of past work on subsets of carved stones (fill in gaps) (Section 3.2.1).
 12. Encourage Open Access publishing (Sections 3.3.2, 3.5.4, 3.7, 6.2.8).
 13. Increase access to grey literature (Sections 3.2.1, 3.5.1, 3.5.2, 3.5.3, 3.7, 6.2.8).
 14. Remove charges for academic use of Canmore images (3.5.4, 3.7.1, 6.2.8).
 15. Ensure Scottish material is considered in its wider geographic context (Section 3.2).
 16. Develop a strategy to use scientific and technological techniques to deliver information about (Section 3.2.2, 3.2.3, 3.2.4, 3.6):
 - a. the stone carver and possibly the place of work
 - b. their support workers and clients
 - c. the character of tools used
 - d. procuring and movement of stone
 - e. the stone's condition from time of carving, as it changes through its lifespan, and condition of it now at the surface and internally—both important for preserving and presenting.
- responses) (Section 3.3.2).
3. Carry out a pilot project to assess options to improve data-recording methods to join up data sets across time and space (Section 3.3).
 4. Exploit the significant opportunity with regards to the scientific study of existing preserved collections of fragments, samples, etc. (Section 3.6).
 5. Assess how to improve Canmore's search capabilities (for example introduce increased labelling, additional search engine terms and tagged images) (Sections 3.5.4, 3.4).
 6. Assess Canmore's potential to improve its capacity to act as an umbrella site with other datasets in order to link carved stones records to other types of data such as architectural, place names, landscape and local history. There should be dual development with HERs and issues should be flagged to Scotland's Historic Environment Data (SHED) forum to incorporate in their strategy to increase access and contextualisation of information (Sections 3.5.4, 3.7.2).
 7. Create a digital handlist for carved stones of the early medieval period and use it to perform an audit of the resource, identifying lost or misplaced stones, and assessing the nature and level of risk to each stone (Section 3.5.1).
 8. Create a digital handlist for carved stones of the later medieval period (to include updating existing handlist of medieval effigies) and use it to perform an audit of the resource, identifying lost or misplaced stones, and assessing the nature and level of risk to each stone (Section 3.5.1).
 9. Through a pilot project, test the strength of existing information and identify gaps in knowledge needing to be filled by an audit of the ecclesiastical carved stone resource in Scotland (Section 3.5.3).
 10. Assess how carved stones are presently being managed (e.g. owners, managers, condition, risk, location, maintenance regimes, previous repairs and preservation) (Sections 3.2.3, 3.5.3, 3.6).
 11. On the basis of the above (7–10), develop more strategic (and research-based) policies for safeguarding stones (Section 3.5.3).
 12. Develop a recording strategy for use by a range of groups (including the public and those lacking subject knowledge) to document different types of ecclesiastical carved stones. This should lead to action on the ground and must reflect current

3.8.4 Projects: enhancing existing

1. Recognise and develop the different scales of analysis that digital technologies can contribute to: carvings (e.g. details of inscriptions), monuments (nature and materiality of the whole monument and its carvings), and landscape (e.g. 'reinstating' carved stones in their landscape phenomenological potential, etc. (Section 3.3.2, 3.2).
2. Review existing scanned material and identify its research potential (including review of process histories, 'capturing' some of existing creative

understanding of carved stones but also enable new appreciations to be developed. This would aim to enhance recording practices to standardize and formalize data capture and management and to identify and share good practice (Sections 3.3, 3.5).

13. Digitize back issues of Pictish Arts Society *Journal* and *Newsletter*, similarly with ‘ephemeral’ publications of other special interest groups (Sections 3.2.1, 3.7, 6.2.8).
14. Conduct an audit of any squeezes still in existence in museums or other collections in Scotland and beyond (bearing in mind practices of collaboration between learned societies, it is possible that some might exist furth of Scotland) (Section 3.3.1).
15. Assess why there is a lack of (early medieval) research questions—are these not being asked because data is not available to frame them? But is data not available because the research community is not indicating this is what they want to know? (Section 3.2).

3.8.5 Projects: new approaches

1. Create a digital/print corpus of all early medieval carved stones from Scotland (a 21st-century equivalent to *ECMS*) (All of Section 3).
2. Develop and apply methods of chemical testing to identify if stones have been submerged in water (implications for procurement and transportation) (Section 3.6).
3. Investigate patterns of loss as evident through modelling destructive agencies to assess whether due to human or environmental agency. It is particularly important for assessment of human agency to have a link with understanding values. For example, the issue of graffiti is not just—and not always—a destructive act and in either case forms part of a stone’s biography (Sections 3.2.3, 3.6).
4. Scan all incised (i.e. non-relief) early medieval monuments—including Pictish Class I and ‘Class IV’ crosses and inscriptions—with a view to conducting groove analysis (through applying statistical methods to high resolution digital surface records) in order to identify different carving techniques, the work of individual carvers, etc.) (Section 3.3.2).
5. Use of experimental carving to answer questions that tie directly to the potential for surface analysis based on digital recording as well as new questions about tool use and tool marks (Sections 3.2.3, 3.3.3).
6. Exploit the phenomenological potential of digital records more fully, to investigate the nature and materiality of the whole monument and its carvings and ‘reinstating’ carved stones in their landscape, etc. (Section 3.3.2).
7. Investigate the capacity for technology to assist with edge enhancement (‘wind back’ weathering) recognising inscriptions and profile analysis (Section 3.3.2).
8. Investigate what the physical form of fractured/damaged surfaces can reveal about cause and date of damage (Sections 3.2.2, 3.6).
9. Conduct chemical testing to identify if stones have been submerged in water during their life-time (for what this tells about procurement and transportation) (Sections 3.2.3, 3.6).
10. Explore the engineering of erection/re-erection using experiential craftworking (Section 3.2).
11. Explore the use of templates in carving ornament, on single monuments and between different monuments (Section 3.2).
12. Explore the transportation of stones using experiential craftworking (Section 3.2).
13. Utilize the newly digitized evidence from medieval charters (POMS database) to identify references to stones (extant and lost) and make the information available via central or linked database (also other medieval sources such as hagiographies now available digitally) (Sections 3.2, 3.7.2).
14. Explore theme of memory, landscape and monuments using historic literary descriptions of moving through the landscape (Section 3.2).
15. Investigate the work of Scots-born stone carvers abroad (Section 3.3).
16. Investigate memorials to Scots abroad (e.g. Scottish cemetery, Kolkata; Gaelic gravestones in Nova Scotia) (Section 3.3).
17. Investigate vocabulary relating to (carved) stones in Gaelic and in Scots, including place names (Sections 3.2.3, 3.4.2).
18. Investigate how ogham stones functioned as markers of memory, power and territoriality (also

themes of inheritance and ancestors) (Section 3.2).

19. Reassess current digital data and applications such as rich intelligence modelling. Review existing scanned material and identify its research potential (Sections 3.3.2). For example:
 - a. establishing if drawings can be generated from scans
 - b. reviewing process histories
 - c. 'capturing' some of the existing creative responses
 - d. obtaining better readings of inscriptions and other key imagery in conjunction with historic plaster casts, etc.

4. UNDERSTANDING VALUE

4.1 Introduction

This section considers why people value carved stones (singly and as collections) and why they are relevant to society. Values are ‘qualities and characteristics seen in things, in particular the positive characteristics (actual and potential)’ (Mason 2002, 7; Section 4.2). These values are not intrinsic to the subject but are socially constructed and contingent. The values that we attribute to things also change with time as understanding and other circumstances change. We therefore need to understand the different ways in which carved stones are valued. We also need to be able to reflect critically on how we have acquired this understanding, and be aware of its implications. Section 4.3 will introduce the strengths and weaknesses of research on different categories of values in relation to carved stones, leading to research recommendations in Section 4.4.

Understanding the value of carved stones is critical because international heritage and conservation practice promotes a values-based approach to heritage management. A values-based approach involves a process whereby decisions—whether addressing conservation needs, developing interpretation plans or managing change for other reasons, such as development—are first informed by an understanding of cultural significance. Understanding significance

releases potential, and is independent of institutional domains and boundaries: it is a ‘powerful persuader’ and a way of eliciting the passion and expertise of curators and others, and of sharing this (Russell and Winkworth 2009, 2–3). It provides the means to ensure that future actions enhance, exploit or, at the very least, do not impact adversely on what is deemed significant—of good practice. Cultural significance is the sum of values, and these need to be researched (de la Torre 2002; 2005). There are useful reviews of the development of the application of values in heritage contexts in, for example, Emerick 2014 and Jones and Leech 2015. Yet, what do we actually know about such values and their application in the context of carved stones? Have we taken into account the cyclical relationship between the creation of knowledge (Section 3) and our academic and scientific values? A related issue is access to data and to knowledge, and how this feeds into the values that people ascribe to things.

An understanding of values in relation to carved stones will also provide a framework and means to progress the aims and intended outcomes of government and sector strategies. *Our Place in Time (OPIT)* refers to the need ‘to ensure that the cultural, social, environmental and economic value of our heritage continues to make a major contribution to the nation’s wellbeing’ (Scottish Government 2014, 7). In terms of SG National Outcomes, a better understanding of carved stones can

| | OPIT | Clark 2010 | English Heritage 2008 | Mason 2002 |
|---------------------------------|---------------|---|--|---|
| Cultural values | Cultural | Scientific | Evidential – potential to yield evidence | Historical (educational/academic and artistic) |
| | | Historical | Historical (illustrative, associative) | |
| | | Artistic/aesthetic | Aesthetic | Aesthetic (visual and other senses) |
| | Social | Social | Communal (commemorative & symbolic, social, spiritual) | Social Spiritual/religious (organized and ‘secular’) |
| Public values (benefits) | Economic | Economic | | Economic |
| | Environmental | Benefits to areas, communities, individuals | | |
| | | Public values (knowledge, identity, bequest, distinctiveness) | | Cultural/symbolic |
| | | | | Political |

Figure 80: Comparison of different schemes for cultural values and public values (the benefits that do or could flow from them).

particularly contribute to two SG National Outcomes: 'We value and enjoy our built and natural environment and protect it and enhance it for future generations' and 'We take pride in a strong, fair and inclusive national identity' (Scottish Government 2015).

4.2 Identifying and evaluating value, significance and importance

This Framework seeks a holistic approach that considers the full range of possible values for carved stones, and allows their research potential to encapsulate the full spectrum of interests, i.e. not just those of academics. Figure 80 illustrates four established typologies and terminologies that can be used as a framework for analyzing values. The carved stones Research Framework adopts Mason's influential set of criteria (Mason 2002) as it seeks to draw a distinction between cultural values and what are better recognized as public values (instrumental benefits). As denoted by Clark (2010), for example, public value recognizes the knowledge value (e.g. through education) of heritage places, their identity value (how we understand the relationship between personal and community identity and a sense of place), bequest value (as something to care for in order to pass down to future generations) and their distinctiveness value (what makes them special). The benefits also include economic growth and regeneration, benefits to areas where projects take place, benefits to communities affected by the projects, and benefits to individuals.

In general, we need to know more about the relationship between cultural and public values. For example, in the case of Hilton of Cadboll (Contemporary social value: Case Study 14; Monument biography: Case Study 16), what has been the impact on local public values of the excavation to understand the context of the cross-slab and to recover its missing portions, and the community's creation and erection of an imaginative reconstruction of the cross-slab? What has been the impact of what happened locally on cultural values held by the other communities of interest?

Establishing values requires a variety of methodologies; it is a process that calls for the involvement of many people in different disciplines and cross-cutting approaches. Values are opinions and these need to come from all interested parties not just specialists. This creates practical challenges for heritage professionals wanting to work in an informed way with an understanding of values. Practically, this means that heritage managers seeking to establish the cultural significance of carved stones, need to be both expert

advisor and orchestrator of the different views that have been garnered, for the values extend to communities of interest beyond their personal, professional and other concerns. It is through a process of what Mason (2002, 14) calls 'elicitation and elaboration' that cultural significance at a particular moment in time can be established in a collaborative way, and in a manner, that can help to manage conflicts and inform a common purpose.

When is expertise in one area to be surrendered to another? Stories have a social value even if that value can be shown to be based on misconceptions. Opportunities arise from the multiple values attributed to carved stones, meaning that you can tell many stories about them, and different communities of interest may intersect in different ways with these stories.

Conservation debates and international charters currently tend to privilege certain values over others. This traditional heritage discourse is most clearly seen in designation practices (Historic Scotland 2011) where the prime considerations in determining whether a monument, building etc. is of national, regional or local importance are historic and aesthetic (Jones and Leech 2015; Section 5.2.2). Ranking (deciding what is most important) is appropriate for specific purposes, but not for ranking multiple and varying values. Certainly, we need ultimately to be able to identify priorities, but we need to improve the evidence base for such decisions and acknowledge that such ranking schemes are over simplistic and not holistic. The risk is that narrowly defined designation schemes have a knock-on effect in terms of how the future of the heritage is approached, such as in determining allocation of grants. There is much that it ought, in theory, to be possible to achieve with intelligent application of informed assessments of significance without ranking systems. Informed assessment of significance can be applied to single, group or national assemblages of carved stones, regardless of who owns or cares for them, and if and how they are presently designated for protection purposes. We also need to acknowledge that carved stones lacking 'national importance' may be significant in other ways; conversely, stones lacking high social recognition may be extremely important.

For example, a gravestone may be valued locally because it commemorates someone who is remembered as playing an important role in the history of the local community, and its production may testify to high levels of local craftsmanship, but there is nothing of national significance about the burial marker, whether in terms of its art-historical significance (its form and decoration), or the associations of the named individual that it commemorates. Simple cross-

incised stones may be of limited aesthetic value, very difficult to date, and potentially hold little interest to the local community, but could be evidence for some of the earliest Christian communities in Scotland, their contacts, their places of burial if not their church sites. (See [Case Study 39](#): Auchnaha)

4.3 Ways of valuing

See Section 8.2 Table 3 and Section 8.3 Tables 9–11.

4.3.1 Historical

Historical value is at the heart of how we value our heritage—its age, developmental sequence, function, rarity or representativity, relationship to things of the same class or related classes or periods, or to features in the vicinity, relationship to the landscape, and associations with people and events (past and current). This is exemplified by traditional designation criteria, which also tend to place an emphasis on aesthetic considerations (Historic Scotland 2011). The historical value of carved stones therefore lies in their educational/academic value, namely their potential to tell us more about our ancestors and what happened in the past, and in their ‘artistic’ value, as a good, unique or representative example of a type of work, etc. (Mason 2002).

Academics have their own individual interests and preferences like anyone else, but what they all have in common in some way is that they value carved stones for their potential to tell us about the past and present, or other scientific potentials. As might therefore be expected, most of the long history of research on carved stones falls in some way into this category, but the knowledge and understanding on which to make such evaluations is highly uneven (see Sections 2 and 3). The carved stones can be explored on many different levels: the intrinsic interest of a stone or stone collection; its immediate context/location; and the landscape setting. There are also scientific developments in the fields of recording and analysis that allow us to ask different questions of the stones themselves. This all means we can still learn to value carved stones in quite different ways from a historical perspective.

There is a welcome trend towards researching the archaeological context of carved stones and their landscape setting (notably prehistoric rock art and early medieval carved stones), but we need more of this. These aspects of historical value are particularly

important when few stones from a particular period (such as early medieval), still stand outside, yet we still have the potential to recover information about where some of these stood or once stood. The former locations of stones, even very important ones, are likely to be unmarked and unprotected. This applies to the site of the Dupplin Cross, which was descheduled after small-scale excavation in advance of the 1998 relocation of the cross to St Serf’s, Dunning. The reason for the move was to protect it from weathering, and it was formerly located on private land where it was difficult of access. The move to Dunning was preceded by a sojourn at the National Museum of Scotland, and the return of the stone to Strathearn was commemorated by the local community, who walked from Dunning to its former hillside location, where a few words were pronounced (pers comm. M Hall). This is a useful reminder of the intangible activities and values associated with carved stones and their (former) locations, but it also begs the question of how and if such sites should be protected/researched/commemorated in the future, and the implications of not doing so.

A key and very positive shift is the recognition that all elements of the history of a carved stone contribute to its biography, need research and are relevant (see Sections 3.3.3 and 4.3.7). There is also a growing appreciation of the value of pre-digital recording



Figure 81: Examining the NMS’ late 19th-century concrete replica of the Kildalton Cross (IB 6) for evidence of its manufacture, at the time of its conservation in 2016. © Doug Simpson



Figure 82: The gravestones in St Vigeans churchyard in Angus were a particular source of inspiration for Joseph Anderson, who was brought up nearby. © Anouk Busset

technologies for carved stones, notably plaster casts (Figure 81). These are things of interest in their own right, and for what they can tell us about their parents, objects that may be worn or even lost (e.g. Needham and Cowie 2012; Foster *et al.* 2014). They invite a composite biographical approach, which also offers, among other things, important insights into the histories of curatorship, of past communities of interest, and the craftsmen who made them (The craft of replicas: Case Study 13; Foster and Curtis 2016).

Blatant weaknesses in understanding historical value include the assumption that even the best-known monuments are well understood (Stone of Scone: Case Study 32) and fully published, a preference for the most complete and visually impressive stones, disregarding the loose and vulnerable fragments (but see Henderson 2005), and a tendency to focus on select attributes of carved stones, rather than seeing them and their context in a more holistic sense. This is very much the case for gravestones where there has been little analysis of values at assemblage level at individual sites even though it is recognized that sites and regions can be highly individual and culturally specific. The potential of collections is generally under exploited, whether because assemblages come from one place, or have come together in a particular museum collection (where a part of their value is what it tells us about histories of collection). More generally and critically, our ability to understand the contextual characteristics of carved stones is hampered by lack of reliable scholarly overviews, and ready access to standardized records about the carved stones. It is often difficult to put them into the wider (regional and supra-regional, ignoring modern national boundary) contexts that are necessary to evaluate them fully from a historical perspective. (See [Case Study 13: The Craft of Replicas](#); [Case Study 32: Stone of Scone](#))

4.3.2 Aesthetic

In this context, aesthetic relates to the sensory qualities of carved stones as experienced by individuals, something that relates strongly to a sense of well-being. It is an art-historical appreciation of an object as a thing of beauty and/or power, but extends beyond the visual qualities. Certain types of forms, designs and motifs on carved stones easily lent themselves to early visual appreciation, notably of some early medieval carved stones, whereas this did not apply to other categories, such as rock art. This begs the question of how aesthetics have an impact on what we choose to research and how we choose to do this. A superficially unpossessing carved stone can have many and important stories to tell (Auchnaha: Case Study 39). ‘Art’ can also be conceptually complex while poorly executed (cf. Pulliam 2015, 211 on the Book of Deer).

Aesthetic appreciation of carved stones is of course very much bound up with their immediate contexts and landscape or museum locations, as well as the materiality of the stones, how they have been worked and how they have aged (Figure 82). The emergence and legacy of the different approaches of archaeological and art-historical disciplines is something to be aware of (e.g. in listing designation criteria). This was not necessarily always an issue in earlier scholarship, with archaeologists recognizing both the art and archaeological aspects of carved stones (see e.g. Hawkes 2009), and archaeological museum curators recognizing the value of the carved stones as, for example, a resource for artists (Anderson 1881a, 134).

Aesthetic considerations stray into artistic (in a historic sense) and indeed into other values. Certain artistic traditions were appropriated, refashioned and revived in later times. An example is the legacy of Celtic



Figure 83: This gravestone at St Machar’s Cathedral in Old Aberdeen (1935) contains subtle visual references to Gaelic tradition including, highly unusually, the letters FEARN in ogham script (a reference to the childhood home of the deceased). © Sally Foster

traditions in art in all media of later medieval times (when they were expressions of powerful heritage and ancestry) and subsequently the Celtic Revival of the 19th and early 20th century, when political and nationalist agendas came to the fore (Pulliam 2015; Fowle 2015). This interest is very clearly seen in our Victorian and Edwardian graveyards (Figure 83; Celtic Revival: Case Study 15). Notable Celtic Revival exponents in Scotland with a particular interest in carved stones and the design on them include Alexander and Euphemia Ritchie (Iona Celtic Art: MacArthur 2003) and George Bain (Seright 1999).

An unknown is the ways in which modern conservation and presentation methods impact on aesthetic values and other values (e.g. the redisplay of the Nigg cross-slab (Figure 84) or The Brodie Stone: Case Study 33; Douglas-Jones *et al.* 2016). Related to these is the ability to see and value the age of something and how the qualities of what Holtorf (2013) calls ‘pastness’ impact on the sense of authenticity (see Section 5.3.4).



Figure 84: Detail of the most recent mounting of the Nigg cross-slab.
© Sally Foster

(See [Case Study 15: Celtic Revival](#))

4.3.3 Social

Social value encompasses the collective meanings and values (significance) attached to heritage practices, places and objects by a contemporary community or communities (Jones and Leech 2015, para 1.6; see Section 5.2.1 for a discussion in relation to ‘ownership’). This contrasts with academically informed historic/artistic perceptions of past significance (Section 4.3.1). It is more a process of valuing than a fixed value category (Jones 2016). While its importance is increasingly recognised in international heritage instruments and policies (Jones and Leech 2015), it proves difficult to give consideration to this in practice, particularly when national regulatory practices may not be fully aligned with a (comprehensive) values-based approach. This is also because the social value of heritage in general is little researched, and because of the challenges of addressing this (Jones 2004, 67).

Contemporary communities in this context can be understood as communities that self-identify in some way. Social value is not exclusive to local communities, as it is most usually interpreted; it may include academics (all sorts, with very diverse perspectives) and other specialists who engage with and may enjoy working with carved stones for their professional duties, pilgrims, tourists, the diaspora (interested in gravestones and genealogy), and special interest groups, such as the PAS. Such communities may be remote/virtual as well as ‘on the spot’. However, it is the non-specialist views that risk being left undiscovered, not articulated and considered alongside the longer-established values.

The practical, conceptual and methodological problems in working with social value are not unique to carved stones but carved stones in Scotland have acquired an international profile in pioneering studies of social value because of their topicality, specifically the Hilton of Cadboll Pictish cross-slab (Contemporary social value: Case Study 14). Historic Scotland grant-aided Siân Jones to produce a research report that explored the values attached to early medieval carved stones, particularly the relationship between meaning, value and place. This evidence-based report was informed by, among other things, ethnographic research (Jones 2004; Foster and Jones 2008). Jones demonstrated why understanding social value is relevant, but each case is different and needs its own research. Nonetheless, she was able to also identify a number of wider implications relevant to early medieval

carved stones in general, and for heritage management in general. Critically in this context, she teased out the different foci and values of the local community and those carrying out their professional duties working for heritage organisations, and what lies behind these. She also pinpointed the different modes and opportunities for negotiating knowledge and authority, in other words for exploration of different values and seeking a common purpose and way forward.

In general, we lack precise information about how people value carved stones, both generally and in specific instances. There is also a lack of understanding of the impact of research on how different communities of interest then value carved stones. What difference, for example, did the Hilton of Cadboll research project make to local understandings, and why? What difference has the redisplay of the collections of early medieval sculptures at Whithorn had, whether on residents, tourists or, for example, those working within the heritage agencies? Knowing this will help us to structure audience development and to find the most effective tools for improving engagement. To what extent do such redisplays increase the awareness of underappreciated collections on the part of academics (and thus act as a catalyst for new research)?

We do not know if there is something about carved stones that makes people value them in a different way from other monuments in their landscapes. How differently are carved stones perceived in different settings, such as at ecclesiastical sites (Figure 85), or prehistoric carvings on the hillside? If communities particularly value stones, is it particular stones, and if so why? Are there perceived differences between 'natural' and cultural (worked) stones? Can folklore studies help with this? What are the traditions of stewardship? How do the discourses of different groups vary, and why? With the potential for local significance arguably untapped (e.g. for local 'stories behind the inscriptions' in graveyards), is there any appetite for local communities to value their carved stones beyond the local, and if so in what ways and why?

Historic and aesthetic values, in particular, are affected by the condition of a stone. Much of the research into stone conservation is about arresting the loss of fabric and managing appearance, such as the impacts of weathering and vegetation growth. But how is the changing form of carved stones or physical measures for their protection affecting their social value (Figure 84; Jones 2006b; Douglas-Jones *et al.* 2016)?

The ACCORD project has been researching the social values invested in replication and 3D models of archaeological material, as both physical replication



Figure 85: The Pictish cross-slab at Elgin Cathedral, with visitors.
© Sally Foster

of digital materials and as original artefacts in their own right. Several local community groups selected carved stones for these exercises (Jeffrey 2015; Jeffrey *et al.* 2015). The laser scanning of carved stones has therefore become a vector for researching the value of the co-production of digital resources by community groups and professionals with heritage and technical expertise.

More generally, with analogue and digital replicas being a tool for understanding, protecting and presenting Scottish carved stones since the late 1830s, there is a case for better understanding how people value and engage with replicas. This has implications for understanding the ways in which authenticity is negotiated, and harnessing that understanding (see Section 5.3.2). Museums that may hold collections of replicas, mainly historic plaster casts of carved stones, also need guidance on how to curate these, particularly if they are under pressure to rationalize their collections/storage spaces. In what ways are such replicas of value (Foster and Curtis 2016)? (See [Case Study 14: Contemporary Social Value](#))

4.3.4 Spiritual/religious

This relates to formal religious and what Mason (2002) terms 'secular' spiritual values, by which he means non-



Figure 86: A significant place may also be created in the present, as in the past: Depiction of a renowned Buddhist teacher carved in low relief and painted in traditional Tibetan Buddhist style, Holy Isle, off Arran (1990s). © Katherine Forsyth

institution-based spiritual experiences. Historic church sites, which may have their origins in early medieval times (Making a difference: Case Study 1), were at the heart of Scottish communities and are often still physically accessible. With their time depth and place-centered focus, such sites offer unique biographies of their communities, even to those no longer interested in them for spiritual/religious reasons. Much of these stories, with their potential international interest, are linked to, if not directly bound up in, the carved stones, notably gravestones. The same applies to places of worship of other denominations and faiths.

The meanings and values attached to the carved stone inheritance of the Church by today's believers have not been researched. However, in at least one instance the stones are being evoked as Living Stones for religious observance although, interestingly, not illustrated (Pray Now Group 2015). This can be contrasted with some past attempts to move carved stones into churches for their protection when the congregations of the time did not want to give them too much liturgical importance (e.g. Strathmiglo, St Madoes, Dupplin at Forteviot; pers comm. M Hall). They are also beginning to play a role in church-led, faith-based pilgrimage tourism (Faith in Cowal: Case Study 12; Scottish Covenanter Memorials Association, established 1966; Pilgrim Journeys: Exploring Scotland's Sacred Places, established 2016 by Scotland's Churches Trust working with VisitScotland).

The social value of carved stones at past and present places of worship for non-believers and those of other faiths requires research (see Section 4.3.3). In a predominantly secular society, how are carved stones (that may require training to understand their texts and visual imagery, or to appreciate their historic significance) to be understood and valued in a religious context (Figure 86)?

The non-institutional spiritual appreciation of carved

stones—of the numinous qualities of their materiality and setting, and its relationship to where and how the carved stones are being preserved and presented to the public, has also not been researched. (See [Case Study 12: Faith in Cowal](#))

4.3.5 Economic

The best assessment of heritage values is likely to come from a complementary use of both cultural (see above) and economic values (Mason 2002, 15), indeed of public values more generally. We are not aware of any work that has specifically looked at the economic value of carved stones, for example of the carved stone heritage trails that exist (the Pictish Trail in Highland etc.), of carved stone-related craftwork, or of mass-produced tourist items. Indeed, work that might have done so in some way, such as the Historic Environment Advisory Council Scotland (HEACS) 2009 report outlining the social and economic context for ecclesiastical heritage, did not engage with carved stones in any way.

There is clearly much work that could be done to consider the economic value of certain carved stones in certain contexts (such as tourism). There is also an economic angle to the ways in which positive community engagement with, for example graveyards, can reduce anti-social behavior, with its social and economic benefits for society (see Section 6.2.1). Research could also be undertaken on non-use public values, which link back to social values: the ways that individuals value carved stones simply for their existence, often as entities with 'agency' (the ability to make a difference) in the community; the way people might want to conserve the carved stones as something they might wish to 'consume' at some stage in the future; and the ways in which people might wish to pass on carved stones to generations to come.

4.3.6 Cultural/symbolic, and Political

Cultural/symbolic value refers to the ways in which carved stones might be used to build cultural affiliations in the present through building on shared values that are not related to the chronology and meanings of a site. Examples include the use of carved stone images, particularly in branding, such as Glenmorangie's prominent use of a design from the Hilton of Cadboll stone as the emblem that adorns their bottles, exemplifying their pride in their Scottish roots (their Tain distillery is close to Hilton of Cadboll; Skipworth in Clarke *et al.* 2012, ix). Other examples include the logo of public and commercial companies, such as Sabhal

Mòr Ostaig's (University of the Highlands and Islands) use of a Burghhead bull. Products, such as Marks and Spencer's inclusion of high-cross-shaped biscuits in their 'Scottish' shortbread also fall into this category. Political value refers to the way that heritage such as carved stones might be used to shape civil society, such as promoting certain ideological causes. The Scottish cause célèbre is the 'Stone of Destiny'/Stone of Scone, delivered to Edinburgh Castle with much pomp and ceremony at the bidding of the Conservative-led Westminster Parliament on St Andrews Day 1996, and viewed with not a little controversy and cynicism (Welander *et al.* 2003; Ascherson 2002). The heritage issues included weighing up the relative value of returning the stone to Scotland against removing it from the very fine medieval coronation throne that had been designed to house it, on top of which it was not returned to Scone Abbey whence it had actually come (Rodwell 2013, 207–216).

4.3.7 Temporal dimension of value

Carved stones offer insights into the social biographies of people (both individuals and communities), while a cultural biographical approach to the carved stones (including collections of stones and replicas) offers the framework for exploring the meaning and values that carved stones had from the point of their creation, including selection of rocks from which to carve them (see Section 3.2.3). The nature and shifting pattern of these values for different communities of interest is of importance in its own right. It enables us to identify how and on what (or not) our present values systems are based, and to provide a hook to the interests of contemporary communities. Graffiti is a particularly good example of how the values attached to specific marks on stones, as well as the act of carving graffiti, change across time and space, and between individuals and communities, and the debates that can arise from this (Figure 87; Graffiti: Case Study 34). By thinking across and between biographies, bigger patterns can be observed. The biographical approach can therefore provide contextual overviews to explore whether different practices can be linked to different periods at regional and national level. It can assist with defining what we mean by 'carved stones', refining our understanding of aspects of materiality (evidence of remaking and reuse, for example) and interpreting the social values placed on carved stones in the present.

A biographical approach also allows some very specific issues to be considered. For example, the value placed on the location and context of carved stones (historically and today) and what underpins those



Figure 87: Norse graffiti made in Maeshowe Neolithic chambered tomb, as recorded in a painted, 20th-century plaster cast in the NMS (IB 310). © Doug Simpson



Figure 88: Spolia—transported carved stone fragments—may have particularly extended cultural biographies, as here in Sir Walter Scott's gardens at Abbotsford, Scottish Borders. © Sally Foster

values (ownership and sense of belonging) (Figure 88). (See [Case Study 34: Graffiti](#))

4.4 Research Recommendations

See also Section 2 for background to these research recommendations.

4.4.1 Principles

1. Ensure that the full range of values of carved stones are routinely explored and used to inform understanding of their significance, and do this in relation to different communities of interest. This will enable value assessments to feed into the heritage cycle.
2. Reflect on the implications of broader understandings of value for carved stone management practices in general, identifying strategic research needs as this knowledge changes.

4.4.2 Problems

1. Bridging the gap in theory and practice between designation criteria/authorised heritage discourse and values-based approaches (Section 4.2).
2. Marrying cultural values and public values in practice (Sections 4.2, 4.3.5).
3. Understanding how access to data and knowledge feeds into values held by the public (Sections 4.1, 4.3.3).

4.4.3 Practice

1. Consider the value of carved stones as single stones, groups and collections (Section 4.3.1).
2. Respect the value of the places that carved stones once stood/were used, and factor this into the overall understanding of the value of carved stones (Section 4.3.1).
3. Apply biographical, interdisciplinary approaches because they offer a framework for exploring value through time and into the present, embracing social value (Section 4.3.7).
4. Ensure regional and supra-regional overviews exist to provide a context in which to understand values

and ultimately significance. Modern national boundaries will often be an irrelevance in this context (Section 4.3.1).

5. Marry an understanding of values with an understanding of the physical condition of the stones and scale of risks to them to establish how the values (and ultimately the significances) are being affected, and what the potential opportunities are (Section 4.3.3).
6. Factor in the value of analogue and digital replicas of carved stones (historic and modern), and in doing so consider a composite biographical approach (Section 4.3.1).

4.4.4 Projects: enhancing existing

1. Establish the different meanings and values placed on carved stones by communities, how this connect to concepts of identity and place, and how knowledge might lead to greater public engagement with the carved stones (Section 4.3.3).
2. Establish how cultural and natural activities affect the historical and current values of the carved stones. Cultural activities include actions to conserve, present and interpret carved stones. Natural activities include the impact of weathering and erosion. Consider these at different scales, in relation to the materiality of the stones, their immediate location and context, and their landscape setting (Sections 4.3.2, 4.3.3).
3. Establish priorities for protecting/researching the earlier, especially primary, locations of carved stones so that we better understand their meaning and values through time (Section 4.3.1).

4.4.5 Projects: new approaches

1. Establish whether there is anything distinctive about how people value carved stones/different types of carved stones, and in different contexts (Section 4.3.3).
2. Focus on understanding neglected areas of carved stone value, such as social, spiritual and economic (Sections 4.3.3, 4.3.4, 4.3.5).
3. Establish how current local communities of believers and non-believers value the stones at ecclesiastical sites, and how can this be used to improve engagement in their protection, engagement and enjoyment (Section 4.3.4).

4. Establish the value of loose and vulnerable carved stones to inform future priorities for attention, and to better understand how to work effectively with them (Section 4.3.1).
5. Explore traditions of stewardship and how these influence the values placed on carved stones (Section 4.3.3).
6. Explore the ways in which provision of greater information about carved stones alters perceptions of their value (Sections 4.1, 4.3.3).
7. Establish how better to use an understanding of value to improve how people engage with and enjoy carved stones (Section 4.3.3).
8. Establish how replicas of carved stones ‘work’ in practice and the implications for heritage management practice (Section 4.3.3).
9. Research and provide guidance for museums on how to assess the significance, needs and opportunities for replicas of carved stones in their care (Sections 4.3.1, 4.3.3).
10. Explore the economic value (actual and potential) of carved stones (Section 4.3.5)
11. Establish the non-use values of carved stones (Section 4.3.5)

5. SECURING FOR THE FUTURE

5.1 Introduction

Securing carved stones for future generations is a dynamic and ongoing process of understanding and seeking to manage change. This means making careful judgements about how to retain the cultural significance of carved stones at the same time as providing for their future needs, including access, security, maintenance and repairs. We need research to underpin our decision-making to help us to identify and adopt the highest standards in conservation management. Scientific and digital technologies have opened new research avenues. These include geological analysis (Magnetic susceptibility: Case Study 9) and 3D recording and modelling (Robert the Bruce: Case Study 5). Such work contributes significantly to our appreciation of the triggers of deterioration and the methods and techniques available to arrest these in order to preserve stones. Scientific and digital technologies additionally create baselines to map future changes in condition and risks to preservation (Section 3.3.2).

Research can help ensure protection through an understanding of carved stones that is both forward-looking and retrospective. We need to be able to anticipate what would happen as a result of our intervention but also to recognise the changes that have already taken place and, where possible, their cause as well as effect. Carved stone biographies can help us to identify previous work in terms of action taken. These may also reveal the philosophies that guided early conservation practice and past use of carved stones within their particular historical contexts (see for example Figure 89). Our work must be reflective for ‘without understanding, conservation is blind and meaningless’ (Clark 2001, 8). There is a need for



Figure 89: As part of the local authority’s landscape ‘improvements’ carried out during the 1950s, many of the gravestones in Preston West Churchyard, Prestonpans were moved from their original positions and laid flat into a concrete and pebble bed. © Susan Buckham



Figure 90: A sandstone headstone suffering from severe stone decay. This stone was moved and reset into the boundary wall of Preston West Churchyard, Prestonpans, East Lothian. © Susan Buckham

research to be more joined-up with practice to help drive the conservation heritage cycle and strategy outlined in Section 1.4. This means engaging more fully with the philosophical and practical dilemmas that arise in consequence of our actions (or indeed lack of action).

Anecdotal evidence and existing research (Section 10) indicate the range of issues facing carved stones (not least the effects of weathering and erosion Figure 90). Currently it is difficult to respond to these strategically without a more detailed understanding of diversity in management practices, the extent of actual conservation on the ground and the current condition of, and risks to, carved stones (Section 3). Consequently, there is an urgent need for research to identify the nature and scale of threats and the options and opportunities to resolve these to safeguard stones. This research will help us to identify the most vulnerable stones, prioritise action and direct future analysis.

5.2 Ways of protecting

See also Section 8.2 Tables 1–3 and Section 8.3 Table 6.

5.2.1 Ownership

Different types of ownership bring with them distinct issues, opportunities and available resources. Further research is needed to create strategies to enhance management and tackle threats to carved stones that are informed by and accommodate these differences. Carved stone owners include central government, local authorities, ecclesiastical bodies, institutions, communities and private individuals. In some cases a stone's owner and manager may be separate parties. A further layer of complexity is created at sites where multiple ownership interests exist (see for example Section 5.3.4). It is difficult to fully grasp the issues involved with caring for stones due to the fragmented nature of responsibilities towards them. Our understanding is particularly constrained by the lack of available records on ownership and condition.

Currently we lack insight into the fundamental curatorial issues facing the ownership groups who bear the biggest share of stewardship responsibilities: local authorities, churches, heritage bodies (for example HES, NMS: National Museums of Scotland, FCS: Forestry Commission Scotland, NTS: National Trust for Scotland), community groups, and farmers and other private individuals. We also know anecdotally that an inability to identify owners is a major issue for carved stones (see also Section 5.2.2). To better understand how ownership, management, protection and enhancement of carved stones interrelate we need research to help answer basic questions like the ones listed below:

- What is the diversity of management within current local authorities (for example for stones in local museums)?
- To what extent do carved stones present a management burden for churches (for example if early medieval fragments are housed within the church)? Is there the need to remain open for visitors, bringing greater security issues or increased insurance? What impact does the increasing amalgamation of parishes under one minister, who may have little knowledge or even interest in the carved stones in the care of individual churches, have in practice on stones?
- What is the impact of changes in ownership and use after churches and manses become redundant upon public access, stone condition or public opinion? How can we create better physical access to sites and monuments (including architectural sculpture) after a change in ownership/use?
- What resources do 'friends of' groups or other



Figure 91: Graveyard 'friends of' groups, like the Friends of the Canongate Kirkyard, Edinburgh, can undertake a range of stewardship activities. Currently we lack a detailed understanding of the benefits and long-term legacy of this type of work. © Susan Buckham

5

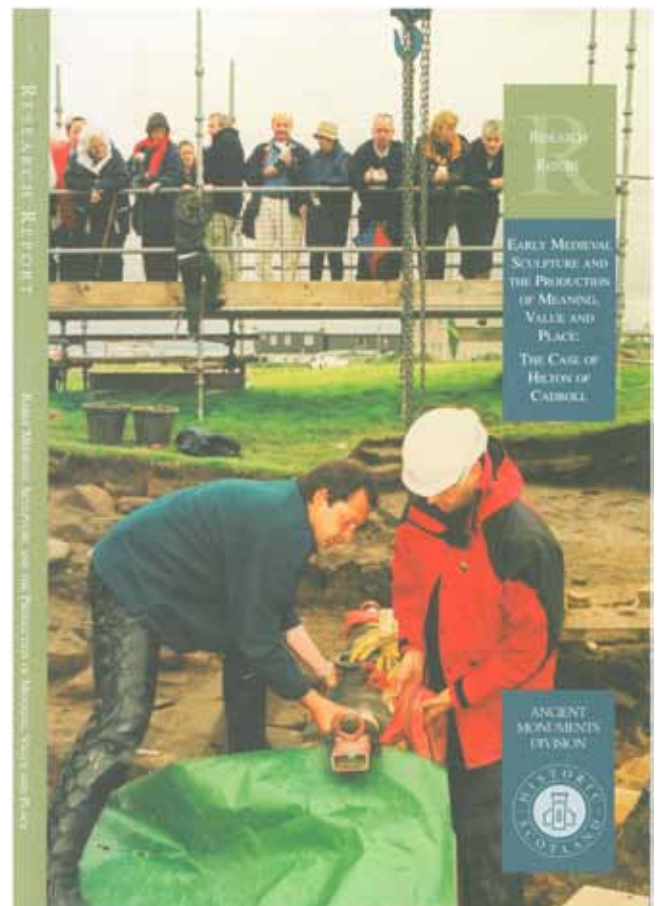


Figure 92: Front cover of Jones 2004 showing the lower portion of the Hilton of Cadboll cross-slab after its discovery and excavation in 2001. Crown Copyright: Historic Environment Scotland

types of community management bring and what professional support is needed to ensure the sustainability of their actions, information, experience and skills (Figure 91)? See also Edinburgh Graveyards Project: Case Study 20 and also the work of Archaeology Scotland's Adopt-A-Monument project.

- How does harnessing community values affect stewardship?
- How does graveyard conservation management conflict with burial provision (Buckham 2011)?

Understanding ideas of the ownership of carved stones is not simply a matter of the legal definition of property. Ownership should also take into account the cultural claims made on the resource, as well as the potential for others to get involved in stewardship. Heritage has a powerful role within the production of social identity (see for example Barkan and Bush 2002). On this basis a carved stone can be part of a group's identity and vice versa; the stone is meaningful because it conveys a group's identity. This interrelationship is founded on the basis that heritage, like identity, is inalienable: it cannot be transferred to the possession of others. Siân Jones in her seminal study of the Hilton of Cadboll cross-slab (2004; 2005; 2006a; Contemporary social values: Case Study 14) has characterised the conservation of carved stones in Scotland as beset by controversy that stems from contested claims of ownership based on different conceptions. She argues that the 'crux of the conflict lies in the distinct meanings and values attached to the monument in local contexts in contrast to the spheres of heritage management and national patrimony' (Jones 2005, 48; Figure 92).

Claims to stones are often expressed through discourses of 'belonging'. This is evidenced by the metaphorical and symbolic meanings communities attached to stones, which are used as a focus to mediate the relationship between people and place. Heritage management systems tend to privilege professional authority and the scientific, aesthetic and historic values of heritage above the values derived from its cultural meaning to contemporary society (see Section 4.2). Accordingly, heritage professionals often lack an awareness and understanding of these social values, particularly within a local context. These values are not monolithic but reflect the heterogeneous nature of communities. Furthermore, the range of claims to stones can become more fragmented and complex, and possibly increasingly contested, where secondary contexts have resulted in new relationships and associations (see Barkan and Bush 2002). The relationship between communities and carved



Figure 93: Robert Fergusson's gravestone at Canongate Parish Churchyard, Edinburgh, has been the focus of a series of attachments that intersect with notions of belonging. © Susan Buckham



Figure 94: Detail of the inscription panel erected by Robert Fergusson's gravestone, Canongate Parish Churchyard, Edinburgh. © Susan Buckham

stones is not static. It may operate at a subliminal level as part of the background of daily life only for latent values and associations to surface when the relationship is threatened, for example by the removal of a carved stone from the locality into a museum far from where it was located. Heritage professionals can perceive these local values as short-lived and so less 'authentic' and valid against conservation needs or national measures of cultural significance (see Section 5.3.2). Local interests and attachments can clash with notions of 'national public benefit', particularly for conservation. The deep-rooted nature of a local community's relationship with carved stones may mean they resist conservation. This is not only because attitudes towards conservation may differ since the concepts of 'preservation', 'protection', 'permanency',

'decay' and 'aging' are all culturally defined, and therefore subjective, but because it may undermine a community's own sense of the authenticity for stones to embody the relationship between themselves and place by demonstrating another's authority and 'ownership' over the stone.

Further research is needed urgently to investigate how the different meanings placed on carved stones by communities connect to concepts of identity and belonging. Identifying case studies where contested ownership has been successfully negotiated could encourage more effective locally based conservation and stewardship. Examples of a continuum of stewardship may similarly inspire community engagement (e.g. Robert Fergusson's gravestone Figures 93–94).

5.2.2 Legislation and codes of practice

Anecdotal evidence suggests the provisions and current enforcement of the law means that the measures that could be used to protect carved stones can prove ineffective in practice (one factor being they were designed to protect the historic environment more generally). Portable stones and gravestones appear to be particularly vulnerable in this respect (Section 5.3.3–4). The risks to loose stones, which frequently fall through legislative and curatorial gaps, are exacerbated by a lack of clarity in the wider sector as to how Treasure Trove and the common law principle of *bona vacantia* might best be applied to such objects. Furthermore, there is a lack of clarity over how the impending changes to burial legislation, which enables grave reuse and procedures for dealing with apparently 'ownerless' gravestones and structures, could affect carved stones in graveyards. We know through anecdotal evidence that an inability to identify legal owners is an issue that can increase the risks to carved stones. For example, if it is not clear who owns a stone, it may be ineligible for designation, regardless of its potential importance. At the very least, designation registers a stone's significance and may mean that its condition is monitored in some way. One example of the problems arising from unclear ownership is shown by a local authority audit of graveyards in Aberdeenshire, which found an absence of paperwork relating to the ownership of graveyards casting uncertainties over who was responsible for the maintenance of sites (see also Section 5.3.4).

Research plays a critical role in helping us to understand how the law and codes of practice influence the management and protection of carved

stones in practice. With this knowledge we can create, implement and evaluate strategies to improve the protection of carved stones. Although many threats are known anecdotally, without a strong evidence base to quantify the actual risks in practice, policy-makers cannot make recommendations to address issues through more effective guidance or, in limited cases, by legislation. Although aspects of property law have a significant impact on the treatment of carved stones, such as through the Treasure Trove process, they were not originally designed with conservation in mind. It is, however, doubtful if there is currently the political will or parliamentary time to change the law relating to the ownership and care of carved stones. Generally speaking, changes to the legislation are most easily effected where good practice is established as the norm and legislation is required to deal with a noncompliant minority.

Scheduled monument and listed building legislation is the primary available means of protecting known carved stones on a statutory basis: Scottish Historic Environment Act 2014; *Scottish Historic Environment Policy (SHEP)*: Historic Scotland 2011; superseded by Historic Environment Policy Statement (*HESPS*):



Figure 95: Tinker's Heart, Loch Fyne, Argyll.
Crown Copyright: Historic Environment Scotland

Historic Environment Scotland 2016. Both categories of designation have the capacity to manage proposed changes to carved stones and their immediate environment. Scheduled status can only relate to stones that have been assessed as nationally important, or are part of monuments assessed as nationally important. Listing, as well as protecting nationally important examples, can also apply to regionally or locally significant carved stones. Scheduled status is primarily determined on the grounds of a monument's cultural values, considered in terms of intrinsic, contextual and associative characteristics, including its potential to inform our understanding of the past. The basis for listing is age and rarity, architectural or historic interest, and close historical associations. Neither of these systems is designed to take into consideration public values, and, while scheduling guidance recognises that social value is a part of cultural value (see Section 4.2), the criteria for assessment of national significance are weighted towards more intrinsic considerations related to historic value (Section 4.2). Yet social and public values are highly important to present communities, so these too are desirable to protect for future generations. The scheduling in 2015 of a heart-shaped stone setting known as the Tinker's Heart in Argyll is the first case to explicitly give a significant weighting to the social values of a monument (Figure 95). In general terms, what is currently designated lags behind not just current academic and scientific values, but also behind current understandings of what cultural value is, *let alone* public values. Some presently undesignated carved stones holding significant social and public values risk being overlooked (and hence are vulnerable), although they may, on (re)assessment, also possess important cultural values too.

Given its passive nature, designation is not an



Figure 96: View showing the poor condition of the landscape at St Michael's Churchyard, Cambusnethan, North Lanarkshire. The graveyard, along with three mausolea, is Category B listed. The graveyard contains several late-medieval grave-slabs and an early medieval cross-shaft was discovered here in 1898. © Susan Buckham

effective safeguard on its own. Indeed, it can create an unrealistic sense of security. This is particularly the case where owners and managers do not have sufficient knowledge about the carved stones, about conservation principles and techniques to inform their actions, or indeed the necessary financial resources to act (see Section 5.3). While it imposes the need to secure consent to any changes to carved stones, it does not require nor necessarily prompt their active management, whether through maintenance or works to enhance, or recover, their significance (see for example Figure 96). A carved stone may be only part of a small element of a structure that is listed, or its curtilage, and its presence, significance and designation may be overlooked. There may be a lack of clarity about the extent of a designation which creates grey areas in terms of how laws are interpreted and applied, thus diluting effective protection.

Current legislation creates a loophole for the disposal of carved stones within churches. There is no legal protection for carved stones inside a church in use with Ecclesiastical Exemption, so the protection offered by listed building status will only apply once the church ceases to be in use. As there is no Scottish equivalent of the Pastoral Measures Act 1983, carved stones are therefore vulnerable to disposal if a church is cleared prior to closure.

Other measures affecting carved stones also involve complex issues for their protection. The 'Treasure Trove' process deals with objects where the descendants of the original owner cannot be traced. Rather than being based on statute law (such as the Treasure Act 1996 elsewhere in the UK), the Crown's right in Scotland to portable antiquities lies in the common law principle of *quod nullius est fit domini regis*, under which treasure and ownerless goods (*bona vacantia*) can be claimed by the Queen's and Lord Treasurer's Remembrancer (QLTR) on behalf of the Crown as part of the royal prerogative. Although not originally intended for the purpose, since the 19th century the law has been used to acquire portable antiquities for museums, including carved stones. Today, the Code of Practice on Treasure Trove in Scotland (revised in January 2016) is the most authoritative statement of the operation of the procedures for treasure and *bona vacantia*, together commonly described as 'Treasure Trove'.

The Treasure Trove process in Scotland is more comprehensive than in many other jurisdictions, and is not concerned with the motivations of the people who originally buried them, the material from which they are made, the ownership of the land on which they are found or the means by which they were discovered. It is, however, solely focused on determining the

ownership of recently discovered portable antiquities, normally allocating those claimed to the care of accredited museums. The process has therefore been described (e.g. Foster 2010a) as presenting grey areas for the protection of stones as there can be different interpretations about whether it covers stones that have been known for many years, that are part of an owned building, or are located on sites where claims can be made to stones on a heritable basis (e.g. a churchyard). Notwithstanding issues over the extent of public understanding of the system and its enforcement, and although not a mechanism designed to provide care for carved stones, if properly implemented the Treasure Trove process can offer protection by museums for most newly discovered stones.

5.2.3 Policy and guidance

Protection is not simply about (passive) designation (see Section 5.2.2); the legislation is supported by policy and guidance. Good management practices, rather than just being enforced, need to be adopted and enabled by guidance and policies that encourage carved stones to be valued. Currently, the extent and nature of internal guidance for different types of owners and managers of carved stones (see Section 5.2.1) is unclear. Core national policy and guidance for carved stones includes the Scottish Executive's 2005 Policy and Guidance for Carved Stones (although not mentioned in *SHEP: Historic Scotland 2011* or *HESPS: Historic Environment Scotland 2016*) and HS's Conservation of Historic Graveyards (Maxwell *et al.* 2001; see Sections 2.8 and 10.8 for further examples).

While resources have been allocated for research to develop guidance or systems to assess risks to carved stones, these have not always sought input from their intended target audiences or been followed up by studies to assess their effectiveness in practice. For example, Maxwell *et al.* 2001 is strong in many important areas of graveyard conservation but some of the best practice recommendations (for example for grass maintenance; Figure 97) are simply unachievable within available local authority budgets. Furthermore no guidance is provided on health and safety, one of the major priorities for cemetery managers. Although the lack of guidance in this area was remedied by HS in 2003, anecdotal evidence suggests that this has had limited effect upon local authority gravestone health-and-safety testing programmes. In other cases, we find research on carved stone condition and risk assessment has not been fully utilised to help create guidance or develop policies. For example, Thomson's 2000 development of a risk-assessment model for

Scottish market crosses has the potential to be applied to other categories of carved stones (see also the *Carved Stone Decay in Scotland Assessment Methodology Handbook*; Section 2.6.3). In other instances, local or regional projects are developing good practice but often information is not being widely shared through guidance literature or published as cases studies. One such example is PKHT's Historic Churchyards project, which piloted the use of different planting schemes aimed at limiting damage to historic stonework from grass cutting.

Anecdotal evidence suggests that current best practice



Figure 97: Gravel is used in in this churchyard to avoid the burden of grass maintenance at the expense of the site's historic character. © Susan Buckham



Figure 98: The moss from this gravestone has been removed using a rake. © Susan Buckham

guidance for carved stones is not being widely followed. Research is needed to understand why this is the case, the impact of this upon carved stone preservation and the potential that exists to raise standards (for example Figure 98). Research should prioritise identifying the types of situations that involve more arbitrary decision-making on the appropriate conservation actions. How do judgements vary, for example, where it is deemed necessary to remove or cover stones? Where are the most important gaps in knowledge (for example assessing significance or repair techniques)? How significant are factors such as a lack of (craft) skills and knowledge, public attitudes, available resources and the mechanisms to deliver management services? What are the connections between awareness, value, protection and policy and how can we capitalise on these? Once we can answer these questions we will be better placed to develop best-practice guidance and policies, to enable the implementation of this and monitor its effectiveness on an ongoing basis with future research.

5.2.4 Physical conservation

Research is needed to consider both the individual needs of carved stones, since each situation is different, as well as wider and strategic issues. Carved stones like other elements of the historic environment need to have their condition assessed and regularly monitored to identify those at risk (Thomson 2000 has wider relevance), while conservation plans need to also take into account the asset's cultural significance as well as its public values: a holistic approach is called for. But what carved stones require active conservation and when? What changes should this involve? Who is needed to make this happen? Do we have the conservation and craft skills to effect this? What philosophical questions do these raise?

Conservation organisations will aim to regularly monitor the monuments that they have a direct responsibility for. HES is particularly ambitious in its use of digital technology. This means that it should be possible for them to monitor the condition of targeted carved stones at the micro level (HES Rae Project initiated in 2011: HES 2015). In practice, though, it is challenging to find a way to regularly and scientifically monitor the condition of carved stones, risks to them (including pace of change) and opportunities to address these issues, even for those that are designated, let alone the wider resource. Mega-level changes (to overall form, and shape of a carved stone/monument) and macro-level changes (to the surface overall and overall condition) are visible to the eye,

but micro-level changes (to the surface detail, through abrasion and weathering) are not. One question is what role volunteers can play in such processes, with the evidence to date suggesting that trained volunteers are well capable of recognising mega and macro-level condition issues, and opportunities to address them, but can identify micro-level issues at a gross level only, and are less likely to be able to identify opportunities to address these. By contrast, risk can only be scientifically assessed by specialists (outcome of an informal review of carved stone projects involving volunteers by members of EH, HS and project managers in May 2005).



Figure 99: Laser treatment to remove soiling from a carved stone in the St Vigens Museum. Crown Copyright: Historic Environment Scotland

This all makes it extremely difficult to identify priorities for conservation action. Added to this, the majority of carved stones are also in private ownership or in the care of organisations whose prime objective is not conservation, such as the Church. With access to technical conservation advice and skills very limited, in both the state and private sector, and ever more limited resources, the outcome is that conservation priorities for action have tended to be piecemeal rather than informed by any overview of where the greatest needs lie from a holistic perspective. Highly significant carved stones can be off-radar, despite high levels of immediate risk to their condition. Even if there is a local champion to progress a conservation project, whether the owner or another party working with the owner's permission, carved stones that are not publicly accessible (in a garden or other private or inaccessible space) are less likely to attract public funds. Research is needed to establish where the priorities for action lie for carved stones that are not in the direct care of conservation bodies, particularly for those categories of carved stones that we already know to be particularly vulnerable in some way (see Section 5.3.3–5). Research is also needed to find the best ways to engage and support the active stewardship of carved stones by a far broader sector of the population. The necessary



Figure 100: Replica of the early medieval cross shaft discovered in 1898 at St Michael's Churchyard, Cambusnethan, North Lanarkshire.
© Susan Buckham

management action may in fact be relatively simple to effect with a little effort (Achnaha: Case Study 39)

If a carved stone has conservation needs, what interventions are appropriate? This may involve visible or invisible alterations to the fabric of the stone, introducing new material (how should old be distinguished from new? should a stone be cleaned? Figure 99), changing the surrounds of the stone to provide shelter from weathering, moving the stone to an alternative protected space (what sort of space and how local should this be?), replacing a stone with a replica (how and in what ways should this be obvious? should former location be marked and how? Figure 100) or even creating replicas (analogue? digital?) to curate while allowing the original stone to 'die' with the passage of time (cf Walderhaug Saetersdal 2000).

Stone conservation solutions are not yet the match for the problems (Doehne and Price 2010, 75) but the science will continue to progress, and conservators need to learn and do more science. Nonetheless, what is acceptable today will likely be regarded as inappropriate in the future, just as we today are critical of many past conservation actions. Knowledge of past conservation techniques needs to be more widely researched, as well as on a case-by-case basis. Today good records need to be kept, not just of what was done but the conservation planning process that led to the decisions about what to do. These records also need to be shared, with scope for OASIS/HERALD to provide an index to such grey literature, but this will require a buy-in beyond archaeological researchers

who already use these facilities.

While the present focus is consolidants, the questions of if and how to control biological growths remains a particularly keen issue for Scottish carved stones. How efficacious from a purely conservation perspective are the shelters (Figure 101) and other protective devices that were or are introduced (see Muir 2005; Sheltering monuments: Case Study 17)? This research wants to include new and creative solutions, such as at Rodney' Stone, Brodie, where a modern wicker artwork provides a wind-break for the Pictish stone, the immediate surroundings of which have been transformed as part of a carefully considered conservation strategy. (See [Case Study 17: Sheltering Monuments](#); [Case Study 33: The Brodie Stone](#))

5.3 Protection priorities

In 2015, participants at the Future Thinking on Carved Stones in Scotland Workshops 1–3 identified a range of dilemmas linked to the conservation and management of stones (Section 5.3.1). Ensuing discussions highlighted how different attitudes towards the concept of 'authenticity' might influence how we respond to these issues in practice (Section 5.3.2). The workshops also identified two particularly high-risk categories that should be prioritised within strategies to protect carved stones: loose and vulnerable carved stones (Section 5.3.3) and gravestones (Section 5.3.4), as well as raising concerns about some other carved stone categories (Section 5.3.5).

See Section 8.2 Tables 1–3 and 8.3 Tables 4 and 8.

5.3.1 Issues and dilemmas

Conservation is embedded with a range of practical and philosophical dilemmas. Accordingly, we need to make judgements about how to balance concerns that achieve the best outcomes holistically for understanding, valuing, preserving and engaging with carved stones. The issues we face may relate to recognising and attempting to resolve conflicting values. For example, are carved stones artefacts or monuments? What weight do the artistic merits of architectural carved stones hold against structural and contextual values? When does graffiti possess cultural values and when is it detrimental to significance (Graffiti: Case Study 34)? Dilemmas may stem from concerns for unintended outcomes of our action (or equally a lack of intervention). For example, can preservation by record be a double-edged sword? How

can we identify future needs? Will increased tourism result in higher risks to stones from visitor damage, theft or vandalism? We face a significant challenge in devising ways to safeguard stones that simultaneously optimise benefits to preservation, research, access and engagement (Foster 2005b). Creating greater self-awareness of these different perspectives enables us to see how changes in preservation link to shifts in the cultural and public values placed on carved stones, and the role our actions to arrest deterioration play in this dynamic. This understanding is urgently needed to guide practical actions to protect the highest at-risk categories of carved stones (see Section 5.3.3–5).

The values of each stone will be different at any moment in time as will their conservation needs, so the range of solutions will always be time- and place-specific, but there are wider issues, beyond the technicalities of conservation science, that we must also research. The approach taken in the Materials, Authenticity and Values (MAV) Project reminds us how critical it is that we reflect on the material qualities of carved stones (and their replicas), and the spaces we encounter them in, how this intersects with the ways authenticity is negotiated, and the manner in which different communities of interest value the thing in question (Science, value and material decay: Case Study 8). Qualitative research is necessary to better understand these issues and their implications for what we do and how we do it. In making our decisions to protect carved stones, what emphasis should we give to the different sorts of values, and where should the balance lie between the cultural and public ones (see Section 4.2)? The Moray Buried tombstones: Case Study 35 is an excellent example of how partnership working initially driven by different, potentially conflicting, sets of cultural values can produce wider benefits for understanding, accessing and engaging carved stones. Conserving *in situ*, the use of shelters or moving stones can impact either positively or negatively on stones' landscape associations and values. Is it more important to keep a stone on display *in situ* or locally than to perhaps provide more ready access or greater security to it somewhere else? What is the attitude of the public, including private owners of carved stones, to replicas of carved stones as part of heritage strategies? How should their presence and role be communicated? (See [Case Study 35: Buried Tombstones](#))

5.3.2 Authenticity

How carved stones are cared for and protected (indeed the heritage in general) is informed by attitudes to what is 'authentic' (see Section 2.8.2); we tend to value



Figure 101: Three early medieval stones in a shelter at Inchinnan New Parish Church. These were moved to the new parish church following the demolition of the old church in 1977. © Sally Foster

those things we perceive to be authentic, and seek to preserve those qualities. Until recently there has been an overwhelming emphasis on material authenticity, with the 'true' nature of objects being defined in relation to origins, provenance and fabric (see Pye 2001; Muñoz Viñas 2011). For carved stone, continuity and character of setting has also played an important role in assessing authenticity, because such materials have often become fragmented or separated from their original contexts. For instance, early medieval carved stone is rarely in its original historical context, and has a 'schizophrenic' tendency to be viewed as both monument and artefact (Foster 2001). The authenticity of subsequent settings, whether in the landscape, historic buildings or museums, is therefore open to question in the context of authorized notions of authenticity, and various forms of expert practice and judgement are devoted to addressing it, and in different contexts (e.g. Jokilehto 2006). Carved architectural fragments that have become detached from ruinous historic buildings also jeopardise authenticity, and much effort is expended on maintaining their material and historical associations, either through physical association or through record.

The rise of conservation science in the mid-late 20th century further reinforced materialist conceptions of authenticity (Muñoz Viñas 2011, 67–9). Increasingly sophisticated techniques for analysing and treating fabric (see Section 2.8.1) offer the promise of ways of both establishing and stabilizing the authenticity of historic objects, including carved stones. However, in the last 20 to 30 years a parallel body of literature has arisen, questioning materialist approaches. It has been argued that authenticity is not an intrinsic or essential quality. Instead it is something that is constructed by people; a product of specific regimes of meaning and practice. Experts—such as art historians, archaeologists, conservators and heritage managers—

play a crucial role it is argued in producing and mediating authenticity.

There has been relatively little research applying these arguments specifically to carved stone monuments and a materialist approach to authenticity prevails especially in the context of their conservation. Nevertheless, some recent studies have attempted to overcome the ‘materialist’/‘constructivist’ dichotomy. Gustafsson and Karlsson (2014) have conducted a comparative study of authenticity at eight rock-art sites with World Heritage Status. Jones and Yarrow (2013) have examined the production of authenticity through expert practice at Glasgow Cathedral, where carved stone elements of the building, in particular the gargoyles, pose specific problems. Jones (2009; 2010) has also examined the experience of authenticity using the early medieval Hilton of Cadboll cross-slab as one of her case studies (Contemporary social value: Case Study 14). This research highlights that the materiality of such monuments, including signs of weathering and age value, are important in terms of people’s experience of authenticity (and see also Holtorf 2013). The Science, value and material decay: Case Study 8 examines the values associated with material transformation and the impact of science-based conservation on these values. More important still is the network of relations between such objects and past people and places. This has important implications for their ‘affective’ qualities and indeed for their role in heritage interpretation and education (see Jones 2016 in press).

There is a pressing need for more research on approaches to authenticity in relation to carved stones. How should we deal with authenticity in light of the often complex and fragmented biographies of many carved stone monuments? Do the carved surfaces and aesthetic qualities of carved stone play a role? How is authenticity experienced in relation to carved stone monuments and fragments and what are the implications as regards their conservation? Carved stones with their history of analogue and digital replication and reconstruction offer a particularly useful laboratory for exploration of what authenticity is, and how it was perceived over the last couple of centuries (in the past many museums, such as the Royal Scottish Museum, had a tradition of disposing of their historic plaster casts of carved stones). This understanding is necessary to inform heritage practice in general as well as the specifics of protecting and presenting carved stones.

Recent research has focused on the historical, ethical and practical issues associated with both physical and digital replicas, often using carved stones as the case studies. For example, the practical questions to

consider in relation to replicas such as achieving a quality of reproduction with an appropriate level of detail, proficiencies in casting techniques and impact on the original stone (Maxwell 2005). Traditionally, the materialist approach has underpinned a straightforward distinction between originals and replicas. Lacking original substance, replicas were seen as secondary, shallow and lacking in ‘aura’, even while they were accorded value in the context of education and display. Yet, recent research has shown that replicas acquire their own cultural biographies, while simultaneously contributing to the social lives of the stones they replicate (Foster *et al.* 2014; Foster and Curtis 2016). It has also been argued that authenticity and value can ‘migrate’ from originals to replicas (Latour and Lowe 2011), while others suggest that replicas acquire distinct forms of authenticity and value (Cameron 2007; Holtorf 2005; Jones 2010). Nevertheless, there have been very few qualitative social studies examining how replicas of historic objects and monuments ‘work’ in their own right and in relation to their parent (though see Jeffrey *et al.* 2015 on digital ‘replicas’). How do they mediate people’s experience of heritage? When and how do they acquire authenticity and value? What kinds of social and material relations do they sustain? Given their widespread use in heritage and museum contexts, there is a pressing need for qualitative research that can increase our understanding of these areas. (See [Case Study 8: Science, Value and Material Decay](#))

5.3.3 At-risk categories of carved stones: loose and vulnerable

Loose and vulnerable stones, often found in and around existing and former ecclesiastical sites (see Figures 102–103), are an ‘at risk’ group for several reasons. Responsibility for them falls between curatorial stools



Figure 102: 17th-century sculptures removed from the chapel at Fettes College, Edinburgh, for safety reasons. © Dianne King

(e.g. museums, HES, local authorities and the church). They are not well protected by current legislation. Listing does not usually cover loose stones and portable stones by definition cannot be scheduled. In many cases ownership is unclear and, where known, owners difficult to trace. Depending on the exact nature their status as ‘ownerless’ and ‘portable’ they may not be covered by Treasure Trove. When stones enter the Treasure Trove process there is a need for full conservation assessments to be made. Their portability is a risk to their traceability and raises the likelihood of theft and sale. Movement increases the chance of stones being taken out of their historical context. There may be issues over the extent and quality of recording and cataloguing to document their original placement (or to develop biographies of secondary associations) and to evidence claims if stones have been stolen or sold. *Ex-situ* architectural stones individually, or as assemblages, are fragments that can provide evidence, which may otherwise be missing, to help us to understand what buildings formerly looked like and how they were used. The gathering together of fragments (or equally not) can make them difficult to access physically. Interpreting their potential evidential value requires specialist knowledge and available resources to carry out analysis, meaning that the importance of fragments can be overlooked with their day-to-day care. If neither designated nor owned, their existence, cultural and public values may simply pass unnoticed. The Elgin Cathedral: Case Study 21 shows how interpretation and presentation can improve how visitors experience and appreciate carved stones, particularly where a stone’s historic and aesthetic importance may not be immediately obvious. (See [Case Study 21: Elgin Cathedral](#))

5.3.4 At-risk categories of carved stones: carved stones in graveyards

The divided nature of ownership within graveyards (gravestones and other funerary structures are heritable property and as such do not belong to the graveyard owner) results in a lack of clarity over responsibilities and inhibits joined-up management (Figure 96). Assessing a gravestone or graveyard’s significance and condition is challenging. This is due to the sheer number of monuments and sites that exist but also because of the diverse range of forms they can take (Figures 45–53). We currently lack information of sufficient detail to enable even a basic assessment of what survives, and in what condition, or to carry out preliminary analytical groupings to create for example monument chronologies (Section 3). Anecdotal evidence clearly shows best practice guidance is not informing the



Figure 103: Detached carved finial from an unknown monument within Canongate Parish Churchyard, Edinburgh. © Susan Buckham

day-to-day care of graveyards (Figures 89, 96–98, 103) and the risks arising from changes to burial legislation are presently unclear. There are limited resources available to care for this considerable resource. A local authority audit of graveyards in Aberdeenshire, found the absence of paperwork relating to the ownership of graveyards cast uncertainties over the statutory responsibilities to maintain sites. This situation is unlikely to change and accordingly there is an urgent need to develop conservation policies tailored to maintenance and current management priorities. The Edinburgh graveyards: Case Study 20 is a good example of a graveyard project informed by a research strategy (for more details see Buckham 2013a). (See [Case Study 20: Edinburgh Graveyards](#))

5.3.5 At-risk categories of carved stones: other categories of carved stone

The architectural carved stones and prehistoric rock art tend to be eclipsed within conservation management strategies and research, which have tended to focus on early medieval carved stone monuments and gravestones (e.g. Section 2.8). The lack of guidance literature and peer-reviewed case studies to inform interventions leaves decision-making vulnerable to being arbitrary rather than grounded in established good practice. Both *in situ* rock art and architectural carved stones can be physically inaccessible which presents logistical challenges for carrying out work and its subsequent monitoring. The Imaging techniques: Case Study 7 shows the value of new technologies for recording carved stones (see also Condition monitoring at Ormaig: Case Study 37). The condition of architectural carvings depends on the effectiveness of the overall building maintenance programmes and rock art on bedrock sites is often exposed and sensitive to environmental changes. Architectural carved stones



Figure 104: Many owners of historic gravestones cannot be traced. In cases where families have died out this leaves stones effectively ownerless. View of Kilmore Churchyard, Dervaig, Mull. © Sally Foster

can hold value on the basis of both their artistic and structural merits. This duality can cause tensions for identifying conservation priorities. In the case of rock art, balancing preservation with access and interpretation can require imaginative solutions to be found (e.g. Dunadd—Figure 64, Cochno). (See [Case Study 7: Imaging Techniques](#))

5.4 Research recommendations

See also Section 2 for background to these research recommendations.

5.4.1 Principles

1. Embed a holistic understanding of the values and significance of carved stones into practices to protect them, following international conservation policies.
2. Engender greater common purpose among the range of communities with an interest in protecting carved stones by seeking to understand and

address their perspectives and issues for them at both individual casework and strategic levels.

5.4.2 Problems

1. Limited ability to create strategies to protect carved stones in the absence of an overview of the resource supported by more detailed records that identifies and assesses the significance of current condition and the risks to carved stones (Section 5.2.4)
2. The fragmented environment for protection (i.e. owners, stewards, curators, funders) leads to a lack of clarity over ownership and management responsibilities meaning that the protection of carved stones in practice can fall into the gaps between different bodies' remit (Sections 5.2.1, 5.3.2, 5.3.4)
3. Addressing what is out of sight: this means recognising and prioritising the needs of carved stones at risk that are generally inaccessible (Section 5.3.5), as well as recognising and prioritising the latent social values placed on carved stones (Sections 5.2.1, 5.3.2).
4. Considerable bodies of data, research and analysis are unpublished, uncollated, and therefore potentially inaccessible to all but heritage managers (Section 5.2.4).
5. Getting the outcomes of valuable day-to-day management and research fed into longer-term research projects (Sections 5.2.3, 5.2.4).
6. Maximising community stewardship while acknowledging there is a gap between what volunteers and specialists can offer in terms of technical and scientific conservation (Sections 5.2.1, 5.2.3, 5.2.4).
7. Expanding the availability of specialist advice and expertise, including knowledge from different disciplines but also skills and expertise gain through practical experience of management and repairs (e.g. crafts people, cemetery managers, museum curators, property managers) (Section 5.2.3, 5.2.4).

5.4.3 Practice

1. Prioritise loose and vulnerable stones; stones associated with past and present ecclesiastical sites as well as other burial sites (Sections 5.3.3,

- 5.3.4).
2. Build on rock-art conservation and management research elsewhere in Britain and Europe (Section 5.3.5).
 3. Factor in carved stone/replica materiality, biography and landscape context (Sections 5.2.1, 5.3.1, 5.3.2).
 4. Adopt reflective practices—forward-looking and retrospective—that acknowledge and consider the intersection of value, authenticity and materiality (Sections 5.2.1, 5.3.1, 5.3.2).
 5. Recognise the value of understanding the history of protection practices on a case-by-case and more strategic level (Section 5.2.4, 5.3.2).
 6. Optimise use of scientific and digital technologies (Sections 5.2.4, 5.3.2).
 7. Support projects that include or focus on active community involvement (Sections 5.2.1, 5.2.4, 5.3.2).
 8. Ensure research is published in peer-reviewed journals (Section 5.3.2).
 9. Avoid reinventing the wheel by making better use of existing research (Sections 5.2.3, 5.3.4).
 10. Develop refreshed/new policy and guidance for carved stones. This should include:
 - a. Advice for local churches to set out procedures for formalised de-accession, covering the steps for the parish to take, as well as for new owners and subsequent purchasers of de-accessioned churches and manse with carved stones (Section 5.2.2).
 - b. Advice on the criteria and method of evaluation for decision making for the most common scenarios to protect stones e.g. using shelters, including re-roofing of ruins (Sections 5.2.4, 5.3.1).
 - c. Assess the degree and impact of arbitrariness within conservation approaches, for example, when to remove stones, and the concerns, views and requirements of audience (Sections 5.2.1, 5.3.1, 5.3.2).
 - d. Consider whether the Treasure Trove process offers opportunities for a conservation assessment (Section 5.2.2).

5.4.4 Projects: enhancing existing

1. Produce a series of rich case studies on groups of carved stones and sites known to be particularly vulnerable within current management (e.g. loose and vulnerable; graveyards; inaccessible sites). Carry out research to establish the nature of incremental changes to curation trends. Use this information to identify main issues and to suggest strategies to resolve them, including priorities to protect and display stones both *in situ* and new relocations (Sections 5.2.4, 5.3.3, 5.3.4, 5.3.5).
2. Investigate the impact of poor practice of groundkeepers, tourists and other unintentional human damage, including how they perceive threats to carved stones including their own impact. This should include a skills audit of those working with or responsible for carved stones (including recorders, tour guides, managers, owners etc.). Scope out the main issues and suggest strategies to resolve them (including strategies for audience development) (Section 5.2.3, 5.2.4, 5.3.1).
3. Build up an evidence base to investigate the connection between protection, policy and the law. Research should explore practices in other countries and consider how to best deploy information to users. This should demonstrate through mapping different scenarios, as well as case studies, what the results will be for carved stones (and loose and vulnerable stones in particular) if current curatorial issues are not resolved. The study should:
 - a. Review the approaches taken in other countries whose legal systems are also predicated on *bona vacantia* to advocate for best practice. Research should clearly set out the limitations of the law to fulfil protection functions and where opportunities exist to improve enforcement (Section 5.2.2).
 - b. Quantify evidence for policy-making to assess the scope for good practice in conservation management to be enforced through new burial legislation (Section 5.2.2).
 - c. Assess the scope for reforming the duty of reporting of archaeological finds, as set out in the Civic Government (Scotland) Act S 67 to strengthen protection for carved stones (Section 5.2.2).
 - d. Assess how the *Treasure Trove Code of Practice* is communicated to and understood by heritage managers and the wider public to identify any

opportunities to improve its effectiveness in practice, including a strategy for implementation (Section 5.2.2).

e. Review the approaches taken in other countries in respect of international best practice that has already crystallised e.g. the Burra Charter (Australia ICOMOS 2013) (Section 5.2.3).

5.4.5 Projects: new approaches

1. Produce a series of rich case studies that reflect on how authenticity is experienced in relation to carved stones (both as monuments and fragments) and in relation to replicas (analogue and digital). Apply findings to identify strategies to improve the protection and stewardship of carved stones both *in situ* and in new relocations and, at the same time, enhance access to and engagement with the resource (Sections 5.2.1, 5.3.1, 5.3.2).
2. Undertake foresight research, to identify long-term trends in potential threats and opportunities in relation to carved stones. For example, consider the ongoing impact of the transfer of Church of Scotland land to private ownership. Use findings to advocate to strengthen guidance, and where feasible, the legislative framework (Sections 5.2.1, 5.2.2).
3. Undertake a programme of on-the-ground investigation of graveyards likely to have early historic foundation through unobtrusive means to help clarify their origin with the aim of improving their protection by cemetery managers (especially in advance of grave reuse) (Sections 5.2.2, 5.3.4).
4. Develop a strategy to identify significant stones that are under threat before deterioration happens. This might involve, for example, risk assessment using details of stone construction and form to identify areas more susceptible to damage and decay, or risks associated by types of ownership (Sections 5.2.4, 5.3.1).

6. ENGAGING AND EXPERIENCING

6.1 Introduction

This section focuses on the mechanisms to create social benefits by promoting an appreciation of values and significance. There is an important distinction to be drawn between understanding the values placed on carved stones (see Section 4) and understanding how engagement with carved stones is both influenced by these values but also shapes these values. In both senses, engagement can be seen as a demonstrable impact of value.

People experience carved stones in myriad ways. They may seek them out directly through site and museum visits or instead experience them as backdrops to their daily lives. Engagement may be mediated virtually through the media, internet and the arts. Such encounters can trigger positive or negative responses to stones. Strategies to improve engagement depend upon understanding how people experience carved stones rather than solely why people value them. Heightened engagement can be achieved through improved physical (or remote web-based) access, interpretation, artistic responses and displays. Engagement is a subjective experience. It allows people to respond to the materiality of carved stones and to enjoy them on their own terms and to draw their own values without necessarily having a specific need for ‘knowledge’.

Our perception of the ‘value’ of carved stones shapes our attitudes and behaviour towards them, either positively or negatively, and influences how we communicate their importance to others. Effective engagement begins with a sound understanding of what enables different modes of interaction, recognising how people appreciate carved stones, and being able to measure the difference they make to people’s lives. Equally, it depends on understanding the influence communities can have upon carved stones and harnessing its positive effects. Research is also important to explore why in some cases engagement does not work.

6.2 Ways of engaging

See also Sections 8.1 Table 3, Section 8.2 Table 3 and Section 8.3 Tables 9–11.

6.2.1 Through better understanding of values

Case studies, like the Faith in Cowal, Edinburgh Graveyards Project and NDRAP rock art recording (Faith

in Cowal: Case Study 12; Edinburgh graveyards: Case Study 20; Rock-art recording: Case Study 29), clearly show communities can make a difference to carved stones. However, we lack an overview that draws this evidence together to map out the ways people engage, their motivations, and how this affects the stones over time. Similarly, we lack details about how carved stones figure in communities’ daily practices, their impact on people’s daily lives and the difference this makes (Figure 105). Future research needs to evaluate impact on a qualitative as well as quantitative basis in order to inform ongoing practice and improve engagement strategies. There are several quantitative metrics that can be used to evaluate success. These include visitor numbers, web page hits, volunteering rates, the number and level of grants secured and instances of vandalism (e.g. graffiti, fire-raising, and theft) or other behaviour that deters visitors to sites with carved stones (e.g. concerns for personal safety due to substance abuse and prostitution). Qualitative measures of success might be found through an assessment of instrumental benefits such as regeneration and economic growth along with social and financial gains to areas where projects take place, and to the individuals and communities affected by projects.



Figure 105: Veil by Jake Kempzell, South Gyle Shopping Centre, Edinburgh, forms part of thousands of people’s shopping experience every year. © Dianne King

6.2.2 Through understanding audiences

The potential audiences for carved stones are multiple and diverse. They include local residents, academics/researchers, policy makers, scientists and artisans but also the creative community, media, schools, church congregations, amenity groups, tourists, special hobbyists and special interest groups. The Rhynie stones: Case Study 23 is an excellent example of the potential for audience engagement by creative community-based collaborations. The internet enables audiences, particularly those overseas, to engage with carved stones virtually. Lots of engagement appears to be happening, particularly within local communities (e.g. through national events such as Doors Open Day: Figure 106). Yet little research currently exists on audience identities, their specific needs, experiences and learning outcomes, and the implications this holds for future practice and research. Without such studies it is difficult to explore why some people are not currently interested in carved stones and to develop strategies to improve engagement with 'missing audiences'. Priority audiences include formal/informal education and lifelong learning as well as congregations and ministers, to help churches theologise their own material heritage (see for example Faith in Cowal: Case Study 12).



Figure 106: Children's I-spy trail at Calton Old Burial Ground, Edinburgh during Doors Open Day 2011. © Susan Buckham

6.2.3 Through targeted interpretation

Targeted interpretation relays the key stories about the past that carved stones can tell us or contribute towards. It is creative. Effective messaging harnesses the special nature of carved stones in terms of their ambiguity of meaning and the freedom of imagination this affords; it reveals stones as personalities and distillations of the landscape and as gateways to creative skills, memory and relationships. Such themes provide opportunities to democratise interpretation to reflect local values. Co-produced and co-curated interpretation is particularly effective at bringing reciprocities of understanding between local communities and professionals (Wemyss Caves: Case Study 36).

Although the range of stories it is possible to tell about carved stones has not yet been fully recognised (see Section 2), it is clear that the 'messaging' needs to be joined-up across the sector and extend beyond one's own community of interest. Research is essential to explore how information can cater to different audience requirements, such as adopting common language or addressing educational gaps, and to determine how different theoretical approaches might make stories 'grip'. The Iona stones redisplay: Case Study 26 illustrates how an approach that considers the materiality and biography of stones can reveal that their importance does not always lie in their artistic form but in the changing ways people in the past engaged with them. Imagining the material in terms of the ideas that were current at the time of its creation and interpreting stones within their landscape and biographical context can optimise access through highlighting historical and social linkages. Such approaches can help viewers appreciate less 'obvious' significance: for example, a fragment of early medieval carving may have little artistic merit but represent the only evidence for an early Christian community in a particular area (Auchnaha: Case Study 39). Case studies can assist with identifying opportunities to improve storytelling by utilising different media (including digital) and from linking and layering of information to extend and deepen engagement. Forthcoming (as of April 2016) guidance on graveyard interpretation produced by Archaeology Scotland's Adopt-a-Monument project and Kirkyard Consulting was designed using feedback from two workshops on graveyard interpretation attended by community groups and professionals involved with heritage or cemetery management.

6.2.4 Through encouraging creativity

Art, literature, theology, performance and experimental

craft practice, as well as digital and visualisation technologies, are all examples of highly effective platforms to explore creative, cross-disciplinary responses to carved stones. Similarly, science offers another strong avenue for engagement, for instance through interpretation of astronomical monuments such as inscribed meridian markers and the Kirkhill Epitome (see Fraser forthcoming) and survey monuments such as Ordnance Survey benchmarks. Recent projects, such as the Ballochmyle: Case Study 24, show the innovative synergies that can result (see also St Andrews University's 3D digital reconstructions of ruined buildings; AOC Archaeology Group 2014; Faith in Cowal 2016). Such approaches, particularly those including public engagement, broaden the context for carved stones, helping to reach new audiences and establish new levels of engagement. The Kelsae Stane: Case Study 25 is an excellent example of how the production of a modern carved stone can engage current communities through a creative process that resonates powerfully and meaningfully with a sense of place. More research is needed to evaluate how social and cultural values are encapsulated or transformed by creative engagement and what the long-term impact is for how communities engage with carved stones (see for example Hall 2013a who considered the use of sculptured stone crosses in popular cinema).

Materiality is a key research area as it lends as much weight to how stones were experienced and made as to their meaning. It involves a consideration of craftsmanship and offers a good opportunity to fuse theory with experimental craft practice and a greater application of theories of visualisation (e.g. groove analysis: Kitzler Åhfeldt 2013).

6.2.5 Through presentation and displays

We communicate the importance of carved stones through their presentation. The use of high-quality designs and materials and well-maintained settings subliminally conveys the value of stones. Good physical or (virtual web-based) access shapes engagement. It allows viewers to experience and respond to the intrinsic qualities and materiality of stones. People are invited to explore and enjoy them on their own terms, creating their own values and significances.

Carved stones offer a ready sense of place both in and out of a landscape context. Presentations that link stones, sites and landscapes (either physically or virtually) so they become part of a journey increase understanding and access (see for example The Cradle of Scotland: Case Study 19; Faith in Cowal: Case Study

12; Elgin Cathedral: Case Study 21; the Association of Significant Cemeteries in Europe European Cemeteries Route). More detailed studies are needed into the ways presentation influences people's experience of heritage and the implications this holds for displaying stones in different contexts or using different media. What happens, for example, when new spaces and new activities are created for carved stones in terms of increasing viewers' accessibility and knowledge (see e.g. Figure 21)?

6.2.6 Through visitor studies

There has been a tendency for visitor studies to use quantitative methods, such as questionnaires and visitor counts, for short-term surveys to look at the visiting patterns, visitor expectations and satisfaction, and the impact of messaging (e.g. Buckham 2013a; Figure 107). More recently, a small number of studies have employed more qualitative methods of assessment, such as in-depth interviews, participant observation and observational tracking, over an extended period of time. This research has produced a far deeper understanding of why people respond to heritage in the ways they do and some of the factors underlying different communities' responses (e.g. Jones 2004; McClanahan 2004).



Figure 107: Visitor surveys were carried out at Canongate Kirkyard, Edinburgh as part of Edinburgh World Heritage's graveyards project. © Susan Buckham

6.2.7 Through education

Educational engagement offers a strong context to communicate the research perspectives and learning potential of carved stones. As the HES Education: Case Study 27 shows this resource possesses significant educational value. It offers multi-disciplinary, place-

based learning suitable for both formal, curriculum-based and informal activities that fit well with cross-sector priorities such as health and well-being, place-making, social inclusion and skills development. However, different educational audiences are likely to be captivated by different questions about carved stones and may well have differing levels of prior knowledge. The Picts learning resource: Case Study 38 illustrates how telling stories familiar to the youngest school children such as ‘Little Red Riding Hood’ using the Pictish symbols can provide an effective hook for deeper engagement with the subject. Research can identify these varying needs (e.g. a lack of familiarity with Christianity and its iconography) but also establish the nature, extent and impact of current educational engagement on audiences and communicators. We need to know, for example, whether teachers are not using existing resources (such as digital materials and CPD opportunities) because they do not know they exist, are not made relevant or because of a skills deficit. To what degree does teaching focus on the history and ‘original’ meaning of carved stones and to what extent does it explore their values to contemporary society? How are they being (or how might they be used) as case studies to support elements of the existing curriculum?

6.2.8 Through information management and access

Greater access to information allows reciprocities of understanding between communities and professional, as well as between different disciplines. It affirms that carved stones are a resource for all. It creates opportunities to input local value and broadens the context for engaging with carved stones, particularly from local to national. Ready access to data creates bridges between different disciplines and generates opportunities to involve different communities in research and analysis as well as data collection. The Reflections on terminologies: Case Study 28 outlines the main steps needed to help make this aspiration a reality. In particular, the accessibility of information plays a fundamental part of the social value of digital records, which research suggests struggles to draw people in emotionally (e.g. Jeffrey *et al.* 2015).

While greater access to data, particularly through digital dissemination modes, has clear benefits, it also highlights some legacy issues around copyright, licensing, reuse and charging for data. The key holders of carved stones datasets include local and national government bodies, academic departments, commercial units and community groups. In addition to the varied means of gaining access (e.g. from immediate direct download to a requirement for written request

for individual data), each of these may have different approaches to how they wish to share their data and for what purposes. This can vary from complete and unfettered open access with no effective licensing restrictions, to a charge for supply and strict conditions on reuse, particularly commercial reuse. An argument has been made that information generated via public funding should in turn be made freely available to the public. This has been the strategic approach for a number of UK and Scottish Government (see Scottish Government 2015) datasets in other sectors using the Open Government Licence (OGL) regime; for example, a number (but not all) Ordnance Survey datasets are available under this regime, which includes commercial reuse. Similarly other licencing regimes, such as Creative Commons, allow multiple forms of licencing, from no restrictions at all (CC0) to versions including no commercial reuse, restrictions on data adaptations, ‘share alike’ clauses and a requirement to attribute the original data creator. While even Creative Commons struggles to map onto IPR, copyright and licencing regimes in every international jurisdiction, the ability for data creators to confidently share their data assured that they will be attributed as the original creator is often enough for many researchers in the academic and community domains. To be comfortable with commercial reuse of one’s data with only an attribution requires a commitment to the concept of ‘open data’ (as opposed to ‘open access’) at its most fundamental, bearing in mind open does not necessarily mean free. Although this approach is currently being advocated widely by various groups internationally, many data creators feel less comfortable with this. In addition it must be recognised that for some organisations their data, especially in media formats, are historically considered as having a financial as well as research value and they operate under historic licencing regimes that reflect this. Ideological positions that might promote ‘open data’ at its most fundamental may have to be tempered with an understanding of the complexities of historic licencing regimes and the financial imperatives under which some data holders operate.

6.2.9 Through volunteering

Volunteers’ engagement with carved stones is longstanding and frequently carried out by local community groups, although several individuals have also made significant contributions (e.g. Betty Willsher). Much of this engagement has typically been ‘bottom up’ in character (e.g. family history societies across Scotland; Buried tombstones: Case Study 35) but over the last 20 years heritage professionals have

designed and co-ordinated projects either focussing on carved stones (e.g. Rock-art recording: Case Study 29, Carved Stones Advisor Project; Perthshire Historic Churchyards) or embracing them as part of a wider heritage remit (Scotland's Rural Past). Increasingly such initiatives seek to foster engagement between local communities and professionals that leads to co-production and co-curation of resources (e.g. Archaeology Scotland's Adopt-a-Monument project; ACCORD). Through such collaboration, there has been an increase in the reciprocities of knowledge exchange and understanding between local communities and professionals (e.g. Community co-production: Case Study 6). Volunteers have been involved in a variety of work including the discovery of stones, their recording, compilation of datasets (e.g. SAFHS Graveyard Inventory), stewardship, interpretation, presentation and research through conferences and publishing (PAS). Volunteer engagement has included the natural environment and citizen-science style projects as well as built-heritage projects.

Relatively little evaluation has been carried out to understand the issues involved and the potential legacy of volunteer engagement. There is a need to create a series of rich case studies to evidence social and cultural impacts and specific areas of engagement. For example, how does harnessing community values affect stewardship? Or how does volunteering shape perceptions of the different values of carved stones to modern communities? How do we replicate success in other areas (e.g. Orkney Heritage)? How might different beneficiaries perceive a particular project activity? Through research, we can help to improve learning from previous projects.

6.3 Research recommendations

See also Section 2 for background to these research recommendations.

6.3.1 Principles

In order to achieve a sustainable heritage cycle it is critical to understand the two-way relationship between the act of experiencing and engaging with carved stones, and how this is mediated, with the ways carved stones are valued.

6.3.2 Problems

1. Knowing how people perceive, relate to and

experience carved stones (and their replicas) in practice (Section 6.2.1).

2. Lacking evidence, and therefore an understanding, of the factors that enable different audiences, in different contexts, to engage in different ways with carved stones (Section 6.2.2).
3. Lack of strategy for how to engage both secular and faith-based communities with churches and churchyards, on the basis that these are no longer places everyone understands, regularly visits or indeed feels comfortable in (Sections 6.2.1, 6.2.6).
4. Limited pre-existing knowledge about carved stones, and in particular their ecclesiastical context, among a wide range of audiences including academics, teachers and creative professionals (Sections 6.2.7, 6.2.8).

6.3.3 Practice

1. Sharing experiences and publishing results e.g. through peer-reviewed journals (Sections 6.2.1, 6.2.2, 6.2.8).
2. Recognise the benefits arising from greater collaboration between the different communities with a (potential) interest in using carved stones for creative and educational projects by actively seeking out partnerships opportunities, and reporting back on outcomes to multi-disciplinary audiences (Sections 6.2.1, 6.2.2, 6.2.4).
3. Support projects that include or focus on local community involvement leading to co-created and co-curated activities and resources (Sections 6.2.1, 6.2.2, 6.2.9).

6.3.4 Projects: enhancing existing

1. Establish a baseline for current engagement with carved stones through working with others (e.g. churches, heritage organisations and voluntary groups etc.) to record activities taking place. Analyse information to identify examples of good practice but also negative outcomes or missed opportunities (e.g. failure to engage local communities, politicians or policy-makers and to identify missing audiences). Feed results back to stakeholders (Sections 6.2.1, 6.2.6).
2. Identify a range of qualitative indicators to measure the effects of engagement with carved stones. These should preferably correspond to SHEA and

BEFS Measuring Success metrics so they can link to SG National Outcomes (Sections 6.2.1, 6.2.6).

educational or tourism benefits (Sections 6.2.6, 6.2.7, 6.2.8, 6.2.9).

3. Identify sites with difficult access (physical and intellectual) or unpublished carved stones. Research the cultural and social significance of stones as a basis to develop and implement audience development strategies. Publish findings to provide case studies of good practice (Sections 6.2.1, 6.2.2, 6.2.6).
4. Evaluate the success and impact of existing educational and other resources for carved stones. Include an investigation of the factors underlying the current lack of wider uptake of digital material aimed at academic and public audiences by tracing engagement online for impact assessment (Sections 6.2.1, 6.2.2, 6.2.7, 6.2.8).
5. Evaluate the success and impact of carved stone projects involving volunteers (Sections 6.2.1, 6.2.2, 6.2.9).
6. Evaluate the success and impact of faith-based tourist projects involving carved stones for both believers and non-believers (Sections 6.2.1, 6.2.2, 6.2.6).
7. Compare the success and impact of accessing digital resources, replicas and experiencing the stones themselves (Sections 6.2.1, 6.2.2, 6.2.6, 6.2.8).

6.3.5 Projects: new approaches

1. Research how presentation (of carved stones and of interpretative material) influences how people experience them. Apply new knowledge to develop interpretation strategies and create a series of rich case studies to help answer:
 - a. What happens when you create new spaces and new activities for carved stones (Sections 6.2.4, 6.2.5, 6.2.6)?
 - b. How can biographical and other thematic approaches to carved stone interpretation be used to make stories 'grip' better? (Sections 6.2.3, 6.2.6).
 - c. How can promotion most effectively encourage visitors? (Sections 6.2.2, 6.2.6).
2. Determine whether creating a community GIS database or community science resources could heighten a sense of inclusivity and ownership, assisting the process of engagement and providing

7. Looking forward

Mute stones can speak volumes to us all, if we choose to listen. Significance is the tool for releasing that potential, thinking and working in a ‘joined-up’ way.

The production of this Research Framework initiated a broader conversation about the value and significance of Scotland’s carved stone heritage in the 21st century, the benefits of future research on this heritage, and how this might best be achieved. Under the headings of Creating Knowledge and Understanding (Section 3.8), Understanding Value (Section 4.4), Securing for the Future (Section 5.4), and Engaging and Experiencing (Section 6.3), the Framework has identified research principles, problems, practices and ideas for projects, whether enhancing existing initiatives or new directions, while historiographies identified how we arrived at our present understanding and some of the gaps and issues with our current understanding (Section 2).

With its wiki-format, users can continue to breathe life into this Framework so that it continues to reflect current practice and research priorities as they inevitably develop over time. This is just the beginning of a process, and it is the ambition of the authors and NCCSS that they and others will continue to organize activities, such as workshops, that will develop some of these issues, and broaden engagement. Ongoing communication and capacity building is crucial, and it is clear that there is much existing data, research, knowledge, experience and enthusiasm across the many existing communities of interest that can be brought together and utilized with a little more effort. But new directions and more significant investments of effort in particular areas are also needed for the needs and opportunities identified in this Framework to be realized in the context of the heritage conservation cycle, national heritage strategies and government national outcomes (see Sections 1.4 and 4.1).

Looking forward, successful carved stone research may appear as:

- International in perspective and outlook: considering the local, national and supra-national, learning from what happens elsewhere.
- Enlightening, offering significant insights into human endeavour and thought.
- In the mainstream of academic, heritage and wider public activities.
- Holistic—admitting and embracing all the possible values and significances that can attach to carved



Figure 108: Entrance to south aisle of the nave, Coldingham Priory. Hunter 1858, engraved by W Banks and Son, Edinburgh

stones, not just the historic; recognizing how research draws from and feeds into making a difference in the heritage conservation cycle.

- Cross-cutting, interdisciplinary, silo-busting and imaginative: challenging, not just for how it makes us think about understandings of carved stones, their value, protection and interpretation, but for our theoretical and practical approaches to other topics.
- Collaborative: strategic and joined-up working across sectors and across stakeholder interests; more common purpose; routinely identifying when planned work with carved stones needs research, or uniquely offers research opportunities, and enabling this; enabling greater and multiple dividends from each unit of research.
- Visionary, directed and targeted: addressing specific needs (as identified in Research Recommendations in this Framework) while practicing foresight; balancing extensive research projects and detailed case studies.
- Intelligent and informed decision-making that brings an understanding of values, condition and risk to strategies and projects to protect and enhance enjoyment and engagement, as well as to

supporting further research.

- Readily accessible as primary data and research outputs for different audiences: available; searchable intelligently; comprehensible; presented to a good and coherent standard.
- Shared and inviting, broadening communities of interest so that carved stones needs and opportunities are better recognized and addressed including and beyond the immediate academic and heritage sector.
- Innovative, employing established and new methodologies, notably scientific and digital technologies. Applying materiality, biography and landscape approaches.
- Enhancing capacity through matching experts, researchers and public, and promoting and developing skills, academic and practical.
- Reflected upon and acted upon with, for example, new policy and guidance, or different approaches to heritage management and interpretation.
- Valued publicly, with carved stones having an impact for their instrumental benefits, and where those uses (e.g. tourism) are informed by research.

8. Carved Stones Workshops

The following are available as .pdfs on
www.scottishheritagehub.com

8.1 Carved Stones Workshop report 1

8.2 Carved Stones Workshop report 2

8.3 Carved Stones Workshop report 3

8.4 Summary of the Impact of Workshops 1-3

9. BIBLIOGRAPHY OF WORKS CITED

Projects online (accessed 17 April 2016)

Aberdeen's March Stones (Aberdeen City) <<http://www.scotlandsplaces.gov.uk/>>

Aberdeenshire Historic Kirkyards (Aberdeenshire Council) <<https://www.aberdeenshire.gov.uk/leisure-sport-and-culture/archaeology/projects/historic-kirkyards/>>

Adding a New Dimension to Dundee's Medieval Carved Stones (AOC Archaeology Group) <<http://dundee-medieval-stones.aocarchaeology.com/>>

Archaeology Community Co-production of Research Data (ACCORD: Glasgow School of Art) <<http://www.gsa.ac.uk/research/research-centres/digital-design-studio/research/current-projects/accord/>> Association of Significant Cemeteries in Europe European Cemeteries Route <<http://cemeteriesroute.eu/european-cemeteries-route.aspx>>

Adopt-A-Monument (Archaeology Scotland) <<http://www.archaeologyscotland.org.uk/our-projects/adopt-monument>>

Carved Stone Adviser (CSAP) <<http://www.scottishgraveyards.org.uk/index.shtml>>

England's Rock Art (ERA) <<http://archaeologydataservice.ac.uk/era/>>

Future Thinking on Carved Stones in Scotland (FTCSS) <<http://www.stir.ac.uk/cehp/projects/>>

Heritage and Science: Working together in the CARE of Rock Art (Newcastle University) <<http://research.ncl.ac.uk/heritagescience/>>

Historic Churchyards (Perth and Kinross Heritage Trust) <<http://www.stir.ac.uk/cehp/projects/>>

Lest Scotland Forgets: Recording the Nation's Great War Memorials' (University of Stirling) <[www.stir.ac.uk/arts-](http://www.stir.ac.uk/arts-humanities/research/areas/history-research/)

[humanities/research/areas/history-research/](http://www.stir.ac.uk/arts-humanities/research/areas/history-research/) Masons' Marks Project <<http://masonsmarkproject.org.uk/>> Northumberland and Durham Rock Art (NADRAP) <http://archaeologydataservice.ac.uk/era/section/record_manage/rm_projects_nadrap_home.jsf>

Ogham in 3D (Dublin Institute for Advanced Studies) <<https://ogham.celt.dias.ie/menu.php?lang=en>>

Rosslyn Chapel (CyArk) <<http://archive.cyark.org/rosslyn-chapel-intro>>

Scottish Ten <<http://www.stoneproject.org/>>

Stone Project (Edinburgh College of Art) <<http://www.stoneproject.org/>>

Strathearn Environs and Royal Forteviot (SERF) <<http://www.gla.ac.uk/schools/humanities/research/archaeologyresearch/projects/serf/>>

Online resources (accessed 17 April 2016)

Canmore (Historic Environment Scotland) <<https://canmore.org.uk/>>

Corpus of Anglo-Saxon Sculpture (University of Durham) <<http://www.ascorpus.ac.uk/>> Corpus of Romanesque Sculpture in Britain and Ireland <<http://www.crsbi.ac.uk/>> Corpus of Scottish Medieval Parish Churches (University of St Andrews) <<http://arts.st-andrews.ac.uk/corpusofscottishchurches/>>

Explore the Collections (Historic Environment Scotland) <<http://collections.historic-scotland.gov.uk/simpleSearch.jsp>> Graveyard Inventory (Scottish Association of Family History Societies) <<http://www.safhs.org.uk/burialgrounds.asp>> OASIS: Online AccesS to the Index of archaeological investigations <<http://oasis.ac.uk/pages/wiki/Main>>

PastMap <<http://pastmap.org.uk/>>

Places of Worship in Scotland (Scottish Church Heritage Research) <<http://www.scottishchurches.org.uk/>>

Scotland's Places <<http://www.scotlandsplaces.gov.uk/>>

War Memorials Online <www.warmemorialsonline.org.uk>

Publications cited

ALCOCK, E., 1988. Pictish symbol stones Class I: where and how? *Glasgow Archaeological Journal*, 15, pp. 1–21.

ALCOCK, L., 1993a. Image and icon in Pictish sculpture. In: R.M. SPEARMAN and J. HIGGITT, eds, *The Age of Migrating Ideas. Early Medieval Art in Northern Britain and Ireland*. Stroud: National Museums of Scotland/Alan Sutton Publishing, pp. 230–236.

ALEXANDER, J.S., 2007. The introduction and use of masons' marks in Romanesque buildings in England. *Medieval Archaeology*, 51, pp. 63–81.

ALLEN, J.R., 1895. On the pressing need of a museum to contain a collection of casts, models, and photographs, illustrative of early art and architecture in Great Britain. *Archaeologia Oxiensis*, I–VI(II), pp. 75–89.

ALLEN, J.R., 1882. Notes on some undescribed stones with cup-markings in Scotland. *Proceedings of the Society of Antiquaries of Scotland*, 16 (1881–2), pp. 79–143.

ALLEN, J.R., 1888. A museum for Christian archaeology for Great Britain. *The Archaeological Review*, 1, pp. 191–

- 196.
- ALLEN, J.R., 1901. The Early Christian monuments of Iona; with some suggestions for their better preservation. *Proceedings of the Society of Antiquaries of Scotland*, 35 (1900–01), pp. 79–93.
- ALLEN, J.R. and ANDERSON, J., 1903 (rep. 1993). *The Early Christian Monuments of Scotland*. Edinburgh (repr. Balgavies): Society of Antiquaries of Scotland (repr. The Pinkfoot Press).
- AL-SADIE, A., 2016. Falkland Palace stonework. *History Scotland*, 16(3), pp. 38–38.
- ANCIENT MONUMENTS BOARD FOR WALES, 2001. *Protecting Early Medieval Inscribed Stones and Stone Sculpture*. Cardiff: Cadw.
- ANDERSON, J., 1881a. Scotland in Early Christian Times (Second Series). *The Rhind Lectures in Archaeology for 1880*. Edinburgh: David Douglas.
- ANDERSON, J., 1900. Description of a collection of objects found in excavations at St Blane's Church, Bute, exhibited by the Marquis of Bute. *Proceedings of the Society of Antiquaries of Scotland*, 34 (1899–1900), pp. 307–325.
- ANDERSON, J.R., 1883. *Scotland in Pagan Times. The Iron Age*. Edinburgh: D Douglas.
- AOC ARCHAEOLOGY GROUP, 2014. *Ormaig Prehistoric Rock Art, Argyll: Archaeological Survey. Unpublished report*.
- AOC ARCHAEOLOGY GROUP, 2015. *Ballochmyle Prehistoric Rock Art: Archaeological Survey. Unpublished report*.
- APPADURAI, A., ed, 1986 (repr 2010). *The Social Life of Things. Commodities in Cultural Perspective*. Cambridge University Press: Cambridge.
- ASCHERSON, N., 2002. *Stone Voices: The Search for Scotland*. London: Granta.
- ASH, M., 1980. *The Strange Death of Scottish History*. Edinburgh: Ramsay Head Press.
- ASHURST, J. and DIMES, F.G., eds, 1990. *Conservation of Building and Decorative Stone Vol 1*. London: Butterworth-Heinemann Ltd.
- AUSTRALIA ICOMOS, 2013. *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance*. Available at <http://australia.icomos.org/wp-content/uploads/The-Burra-Charter-2013-Adopted-31.10.2013.pdf>. Burwood: Australia ICOMOS.
- BAKER, M., 1991. "Proper ornaments for a library or grotto": London sculptors and their Scottish patrons in the eighteenth century. In: F. PEARSON, ed, *Virtue and Vision: Scotland and Sculpture 1540–1990*. Edinburgh: National Galleries of Scotland, pp. 45–63.
- BALDWIN BROWN, G., 1905. *The Care of Ancient Monuments. An Account of the Legislative and other Measures adopted in European Countries for Protecting Ancient Monuments and Objects and Scenes of Natural Beauty, and for Preserving the Aspect of Historical Cities*. Cambridge: Cambridge University Press.
- BARKAN, E. and BUSH, R., eds, 2002. *Claiming the Stones/naming the Bones: Cultural Property and the Negotiation of National and Ethnic Identity*. Available at <http://www.getty.edu/publications/virtuallibrary/0892366737.html?imprint=gtrs>. Los Angeles: Getty Research Institute.
- BARNES, J., In prep. *Of warriors and beasts: Viking Age interactions between the Kingdoms of Strathclyde and Northumbria*. PhD edn. University of Glasgow.
- BARNES, M., 1994. *The Runic Inscriptions of Maeshowe, Orkney*. Uppsala: Department of Scandinavian Languages, Uppsala University.
- BARNES, M.P. and PAGE, R.I., 2006. *The Scandinavian Runic Inscriptions of Britain*. Uppsala: Department of Scandinavian Languages, Uppsala University.
- BARNETT, T. and SHARPE, K., eds, 2010. *Carving a Future for British Rock Art. New Directions for Research, Management and Presentation*. Oxford and Oakville: Oxbow Books.
- BATH, M. and WILLISHER, B., 1996. Emblems from Quarles on Scottish gravestones. In: A. ADAMS and L. GOVE, eds, *Emblems and Art History: 9 Essays, vol. 1*. Glasgow: Glasgow Emblem Studies, pp. 169–201.
- BECKENSALL, S., 1999. *British Prehistoric Rock Art*. Stroud: Tempus.
- BELL, G., 2002. The management challenges of caring for graveyards: issues of health and safety. In: A. DAKIN, ed, *Conservation of Historic Graveyards*. Edinburgh: Historic Scotland, pp. 29–32.
- BELL, G.T., 1993. *Monuments to the Fallen: Scottish War Memorials of the Great War*. PhD edn. University of Strathclyde.
- BENTKOWSKA-KAFEL, A., DENARD, H. and BAKER, D., 2012. *Paradata and Transparency in Virtual Heritage*. Farnham: Ashgate.
- BERTILSON, U. and MCDERMOTT, L., eds, 2004. *The Future of Rock Art—A World Review*. Stockholm: Rapport frånRiksantikvarieämbetet 2004:7.
- BEVERIDGE, E., 1893. *The Churchyard Memorials of Crail. Containing a Full Description of the Epitaphs Anterior to 1800: Together With Some Account of the Other Antiquities of the Burgh*. repr. 2010 edn. privately printed (repr. British Library/Amazon).
- BILLINGS, R.W., 1845–52. *Baronial and Ecclesiastical Antiquities of Scotland*, 4 vols. Edinburgh: William Blackwood and Sons.

- BJELLAND, T. and HELLBERG, B.H., 2005. *Bergkunst*. Enveiledningidokumentasjon, skjøtsel, tilrettelegging og overvåking av norsk bergkunst. Available at http://www.spatial.baltic.net/_files/Handbook_Preservation.pdf. NorskFaggruppe for Bergkunstkonservering.
- BLACK, W.G., 1928. *The Scots Mercat 'Cross': An Inquiry as to its History and Meaning*. Glasgow and Edinburgh: William Hodge and Co Ltd.
- BLACKIE, T. and MACAULAY, C., 1998. *The Sculptured Stones of Caithness: A Survey*. Balgavies: Pinkfoot Press.
- BLINDHEIM, M., 1985. *Graffiti in Norwegian Stave Churches, c. 1150–c.1350*. Oslo: Universitetsforlaget.
- BOYES, N., 1999. Stone conservation within Historic Scotland from 1954 to the present day. In: M.S. JONES and R.D. WAKEFIELD, eds, *Aspects of Stone Weathering, Decay and Conservation. Proceedings of the 1997 Stone Weathering and Atmospheric Pollution Network Conference (SWAPNET'97)*. London: Imperial College Press, pp. 170–178.
- BRADLEY, R., 1997a. *Rock Art and the Prehistory of Atlantic Europe*. London and New York: Routledge.
- BRADLEY, R., 2009 (repr 2010). *Image and Audience. Rethinking Prehistoric Art*. Oxford: Oxford University Press.
- BRADLEY, R., WATSON, A. and ANDERSON-WHYMARK, H., 2012. Excavations at four prehistoric rock carvings on the Ben Lawers Estate, 2007–2010. *Proceedings of the Society of Antiquaries of Scotland*, 142, pp. 27–61.
- BREEZE, D., 2000. Artefacts and monuments: the building blocks of identity. In: J.M. FLADMARK, ed, *Heritage & Museums. Shaping National Identity*. Shaftesbury: Donhead, pp. 183–189.
- BREEZE, D.J., 2006. *The Antonine Wall*. Edinburgh: John Donald.
- BROWN, I.G., 1991. David Hume's tomb: A Roman mausoleum by Robert Adam. *Proceedings of the Society of Antiquaries of Scotland*, 121, pp. 321–422.
- BROWN, M., 2012. *Scotland's Lost Gardens: From the Garden of Eden to the Stewart Palaces*. Edinburgh: RCAHMS.
- BRYAN, P., 2015. *Experience and practical insights: 3D laser scanning for heritage*. Available at <http://www.geoinformatics.com/wp-content/uploads/2015/12/GEO815DIGI.pdf>. *Geoinformatics*, 18(8), pp. 10–13.
- BRYCE, I.B.D. and ROBERTS, A., 1993. Post-Reformation Catholic houses of north-east Scotland. *Proceedings of the Society of Antiquaries of Scotland*, 123, pp. 363–372.
- BRYCE, T. and CALDWELL, D.H., 1981. Scottish medieval sculpture—the making of reproductions and their uses. *Museums Journal*, 81(2), pp. 67–70.
- BRYDALL, R., 1895. Monumental effigies of Scotland from the thirteenth to the fifteenth century. *Proceedings of the Society of Antiquaries of Scotland*, 29 (1894–5), pp. 329–410.
- BUCKHAM, S., 2002. The Carved Stones Adviser Project: new initiatives in the recording and conservation of historic graveyards. In: A. DAKIN, ed, *Conservation of Historic Graveyards*. Edinburgh: Historic Scotland, pp. 59–67.
- BUCKHAM, S., 2006. *Analysis of the Carved Stones Adviser Project Graveyard Recording Forms*. Final Report April 2006, unpublished report for Council for Scottish Archaeology, Edinburgh.
- BUCKHAM, S., 2011. 'Not architects of decay': the influence of cemetery management on cemetery landscapes. *Context*, March, pp. 32–34.
- BUCKHAM, S., 2013a. *The Edinburgh Graveyards Project. A Scoping Study to Identify Strategic Priorities for the Future Care and Enjoyment of Five Burial Grounds in the Heart of the Edinburgh World Heritage Site*. Available at http://www.wmf.org/sites/default/files/wmf_publication/Edinburgh%20Graveyards%20Project.pdf. New York: World Monuments Fund.
- BUCKHAM, S., 2015a. Graveyards. In: CULTURE & SPORT GLASGOW (MUSEUMS), ed, *Exploring our Past. Essays on the Local History and Archaeology of West Central Scotland*. Available at http://www.glasgowlife.org.uk/museums/about-glasgow-museums/publications/online-publications/Documents/H_Graveyards.pdf. Glasgow: Glasgow Museums, pp. 207–216.
- BUCKHAM, S., 2015b. *Govan Old Churchyard Conservation Management Plan*. Unpublished report edn. Glasgow: Friends of Govan Old.
- BUCKHAM, S., 2016. 'Not architects of decay': the influence of graveyard management on Scottish burial landscapes. In: S. BUCKHAM, P.C. JUPP and J. RUGG, eds, *Death in Modern Scotland, 1855–1955 Beliefs, Attitudes and Practices. Studies in the History and Culture of Scotland—Volume 6*. Oxford: Peter Lang, pp. 215–240.
- BUCKHAM, S. and DAKIN, A., 2007. *Scotland's Historic Graveyards Project Audience Development Plan*, unpublished report for Archaeology Scotland.
- BUCKHAM, S. and FISHER, F., 2013. *Conservation Strategy for Historic Graveyards in the Clyde and Avon Valley Landscape*. Unpublished report for the Clyde and Avon Valley Landscape Partnership.
- BUCKHAM, S., JUPP, P.C. and RUGG, J., eds, 2016. *Death in Modern Scotland, 1855–1955 Beliefs, Attitudes and Practices. Studies in the History and Culture of Scotland—Volume 6*. Oxford: Peter Lang.

- BUSHNELL, J., 1990. *Moscow Graffiti: Language and Subculture*. Boston: Unwin Hyman.
- BUSSET, A., In prep. *Early medieval carved stones from Ireland, Scotland and Scandinavia: A comparative study through place, movement, memory and identity*. PhD edn. University of Glasgow.
- BYATT, M., 2008. Carved Stones from Kinneddar (Drainie) and Burghead. *A Catalogue of the Pictish Stones in the Collections of the Elgin Museum*. Elgin: The Moray Society.
- BYRNE, D., BRAYSHAW, H. and IRELAND, T., 2003. *Social Significance: A Discussion Paper*. Available at <http://www.environment.nsw.gov.au/resources/cultureheritage/SocialSignificance.pdf>. 2nd edn. Hurstville: New South Wales National Parks and Wildlife Service.
- BYRNE, F.J., 2008. The inscriptions in the main passage tomb at Knowth. In: F.J. BYRNE, W. JENKINS, G. KENNY and C. SWIFT, eds, *Excavations at Knowth 4: Historical Knowth and its Hinterland*. Dublin: Royal Irish Academy, pp. 89–119.
- CALDER, A., 2004. The Scottish National War Memorial. In: W. KIDD and B. MURDOCH, eds, *Memory and Memorials: The Commemorative Century*. Aldershot: Ashgate, pp. 61–74.
- CALDWELL, D., KIRK, S., HOWARD, S. and RUCKLEY, N., 2015. Oronsay's sculptural heritage. *History Scotland*, 15(5), pp. 25–28.
- CALDWELL, D.H., MCGIBBON, F.M., MILLER, S. and RUCKLEY, N.A., 2010. The image of a Celtic society: medieval West Highland sculpture. In: P. O'NEILL, ed, *Celts in Legend and Reality. Sydney: Papers from the Sixth Australian Conference of Celtic Studies*. Sydney Series in Celtic Studies 9. Sydney: University of Sydney, pp. 13–59.
- CAMERON, F., 2007. Beyond the cult of the replicant: museums and historical digital objects—traditional concerns, new discourses. In: F. CAMERON and S. KENDERDINE, eds, *Theorizing Digital Cultural Heritage*. Cambridge, Massachusetts: MIT Press, pp. 49–75.
- CAMERON, F. and KENDERDINE, S., eds, 2007. *Theorizing Digital Cultural Heritage*. Cambridge, Massachusetts: MIT Press.
- CAMPBELL, E., forthcoming. Peripheral Vision: Scotland in Early Medieval Europe. In: A. BLACKWELL, ed, *Scotland in Early Medieval Europe*.
- CAPWELL, T.E., 2005. Observations on the armour depicted on three mid-15th-century military effigies in the Kirk of St. Nicholas, Aberdeen. *Journal of the Armour Research Society*, 1, pp. 5–22.
- CARLUKE PARISH HISTORICAL SOCIETY, 2005. *The Forest Kirk and its Graveyard: Stories behind the Stones*. Carluke: Carluke Parish Historical Society.
- CARTER MCKEE, K., 2013. Burns and the British Empire: viewing a Scottish monument from an imperial perspective. *Architectural Heritage*, 24, pp. 21–39.
- CARTY, A., 2005. Three-dimensional recording of Pictish sculpture. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 367–374.
- CARVER, M.O.H., 2005. Sculpture in action: contexts for stone carving on the Tarbat peninsula, Easter Ross. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 13–53.
- CARVER, M., GARNER-LAHIRES, J. and SPALL, C., forthcoming. *Portmahomack on Tarbat Ness. An Iron Age Estate, Pictish Monastery, Scots Trading Farm and Medieval Township in North-East Scotland*. Edinburgh: Society of Antiquaries of Scotland.
- CASSAR, M., 2009. Sustainable heritage: challenges and strategies for the twenty-first century. *Journal of Preservation Technology*, 40(1), pp. 3–11.
- CASSIDY, B., ed, 1992. The Ruthwell Cross. Papers from the Colloquium Sponsored by the Index of Christian Art. Princeton University, 8 December 1989. *Index of Christian Art, Occasional Papers 1*. Princeton: Index of Christian Art, Department of Art and Archaeology, University of Princeton.
- CHAMPION, M., 2015. *Medieval Graffiti The Lost Voices of England's Churches*. London: Ebury Press.
- CHARLES-EDWARDS, G., 2004. A reconsideration of the origins on the early Insular monumental lettering of a mixed alphabet type: the case of the 'Lapis Echodi' inscription on Iona. *Proceedings of the Society of Antiquaries of Scotland*, 134, pp. 173–181.
- CLARK, K., 2001. *Informed Conservation. Understanding Historic Buildings and their Landscapes for Conservation*. London: English Heritage.
- CLARK, K., 2010. Values in cultural resource management. In: G.S. SMITH, P.M. MESSENGER and H. SODERLAND, eds, *Heritage Values in Contemporary Society*. Walnut Creek: Left Coast Press, pp. 89–99.
- CLARKE, D.V., 2007. Reading the multiple lives of Pictish symbol stones. *Medieval Archaeology*, 51, pp. 19–39.
- CLARKE, D.V., BLACKWELL, A. and GOLDBERG, M., 2012. *Early Medieval Scotland. Individuals, Communities and Ideas*. Edinburgh: National Museums Scotland.
- CLIFFORD, T., 1991. Introduction. In: F. PEARSON, ed, *Virtue and Vision: Scotland and Sculpture 1540–1990*. Edinburgh: National Galleries of Scotland, pp. 9–25.

- COLEMAN, J.J., 2014. *Remembering the Past in Nineteenth-Century Scotland. Commemoration, Nationality and Memory*. Edinburgh: Edinburgh University Press.
- COLLINGWOOD, R.G. and WRIGHT, R.B., 1965. *The Roman Inscriptions of Britain*. Oxford: Clarendon Press.
- CRAIG, D.J., 1993. *The distribution of pre-Norman sculpture in south-west Scotland: provenance, ornament, and regional groups*. PhD edn. University of Durham.
- CRAIG, D., 1994. The early medieval sculpture of the Glasgow area. In: A. RITCHIE, ed, *Govan and its Early Medieval Sculpture*. Stroud: Alan Sutton Publishing Ltd, pp. 73–91.
- CRAWFORD, B.E., 2005. *The Govan Hogbacks and the Multi-Cultural Society of Tenth-Century Scotland*. Glasgow: Friends of Govan Old.
- CRUIKSHANK, J., 1941. *Logan's Collections [important nineteenth-century record of funeral monuments in and around Aberdeen]*. Aberdeen: Spalding Club.
- CURLE, C.L., 1940. The chronology of the early Christian monuments of Scotland. *Proceedings of the Society of Antiquaries of Scotland*, 74 (1939–40), pp. 60–116.
- CURLE, C.L., 1962. Some little known Early Christian monuments in the west of Scotland. *Proceedings of the Society of Antiquaries of Scotland*, 95 (1961–2), pp. 223–226.
- CURRIE, A., 1830. *A Description of the Antiquities and Scenery of the Parish of North Knapdale*. Glasgow: W.R. M'Phun.
- CUTMORE, C., 1996. *Memorial stones in the kirkyard at Govan: a study of the early modern monuments and the interplay with the re-used early medieval "Govan Stones"*. MA edn. Department of Archaeology, University of Glasgow.
- DAKIN, A., 2002. *Conservation of Historic Graveyards*. Edinburgh: Historic Scotland.
- DALGLISH, C. and DRISCOLL, S.T., 2009. *Historic Govan. Archaeology and Development*. York: Council for British Archaeology.
- DARVILL, T. and FERNANDES, A.P.B., eds, 2014a. *Open-air Rock-art Conservation and Management. State of the Art and Future Perspectives*. New York and London: Routledge.
- DARWOOD, A. and MARTIN, P., 2005. *Milestones of Fife*. Not stated: East Neuk Preservation Society.
- DAVIDSON, F., 1977. *Seventeenth Century Tombstones of Angus and the Mearns: An Inventory*, Not stated: Angus District Council Libraries & Museums.
- DE LA TORRE, M., 2002. *Assessing the Values of Cultural Heritage: Research Report*. Online at http://www.getty.edu/conservation/publications_resources/pdf_publications/pdf/assessing.pdf. Los Angeles: The Getty Conservation Institute.
- DE LA TORRE, M., ed, 2005. *Heritage Values in Site Management. Four Case Studies*. Los Angeles: The Getty Conservation Institute.
- DOEHNE, E. and PRICE, C.A., 2010. *Stone Conservation. An Overview of Current Research*. Available at <http://www.worldscientific.com/doi/abs/10.1142/9781783263431>. 2nd edn. Los Angeles: Getty Conservation Institute.
- DOLAN, B., 2013. "Mysterious waifs of time": some thoughts on the functions of Irish bullaun stones. *Journal of the Royal Society of Antiquaries of Ireland*, 142–3 (2012–13), pp. 42–58.
- DONALDSON, G., 1987. The Dunbar Monument in its historical setting. In: *EAST LOTHIAN ANTIQUARIAN & FIELD NATURALISTS' SOCIETY, ed, Dunbar Parish Church 1342–1987*. Not stated: East Lothian Antiquarian & Field Naturalists' Society, pp. 1–16.
- DOUGLAS-JONES, R., HUGHES, J.J., JONES, S. and YARROW, T., 2016. Science, value and material decay in the conservation of historic environments. *Journal of Cultural Heritage*.
- DRANSART, P. and BOGDAN, N.Q., 2004. The material culture of resucancy at Fetternear: kin and religion in post-Reformation Scotland. *Proceedings of the Society of Antiquaries of Scotland*, 134, pp. 457–470.
- DRISCOLL, S.T., 2000. Christian monumental sculpture and ethnic expression in early Scotland. In: W. FRAZER and A. TYRELL, eds, *Social Identity in Early Medieval Britain and Ireland. Studies in the Early History of Britain Series*. Leicester: Leicester University Press, pp. 233–252.
- DRISCOLL, S.T., 1988. Power and authority in Early Historic Scotland: Pictish symbol stones and other documents. In: J. GLEDHILL, B. BENDER and M.T. LARSEN, eds, *State and Society. The Emergence and Development of Social Hierarchy and Political Centralization. One World Archaeology Series*. London: Thomson Publishing Services, pp. 215–236.
- DRISCOLL, S.T., O'GRADY, O. and FORSYTH, K., 2005. The Govan School revisited: searching for meaning in the early medieval sculpture of Strathclyde. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 135–158.
- DRUMMOND, J., 1861a. *Scottish Market-crosses*. Edinburgh.
- DRUMMOND, J., 1861b. Notice of some stone crosses, with especial reference to the market crosses of Scotland. *Proceedings of the Society of Antiquaries of Scotland*, 4 (1860–61), pp. 86–115.

- DRUMMOND, J., 1881. *Sculptured Monuments in Iona & the Western Highlands*. Edinburgh: Society of Antiquaries of Scotland.
- DUNBAR, J.G., 1999. *Scottish Royal Palaces. The Architecture of the Royal Residences during the Late Medieval and Early Renaissance Periods*. East Linton: Tuckwell Press Ltd/Historic Scotland.
- EDWARDS, N., 2007. *A Corpus of Early Inscribed Stones and Stone Sculpture in Wales, Vol. 2 South-West Wales*. Cardiff: University Wales Press.
- EDWARDS, N., 2013. *A Corpus of Early Inscribed Stones and Stone Sculpture in Wales Vol. 3 North Wales*. Cardiff: University Wales Press.
- EDWARDS, N. and HALL, M.A., 2005. Protecting carved stones in Scotland and Wales. *Church Archaeology*, 7–9 (2003–05), pp. 127–129.
- EMERICK, K., 2014. *Conserving and Managing Ancient Monuments. Heritage, Democracy and Inclusion*. Woodbridge: The Boydell Press.
- EMSSS WORKING GROUP, 2005d. *Early Medieval Stone Sculptures of Scotland Working Group. Final report to NCCSS*. Compiled by M.A. Hall. Available at http://www.carvedstones.scot/uploads/4/4/0/3/44032535/emss_final_report_24_nov_2005.pdf. Unpublished report edn.
- ENGLISH HERITAGE, 2008-last update, *Conservation Principles, Policies and Guidance*. Available at <http://www.english-heritage.org.uk/publications/conservation-principles-sustainable-management-historic-environment/> [Nov/04, 2014].
- ENGLISH HERITAGE, 2011. *Designation Listing Selection Guide: Commemorative Structures*. Available at https://content.historicengland.org.uk/images-books/publications/dlsg-commemorative-structures/commemorative_structures_final.pdf. London: English Heritage.
- FAITH IN COWAL, 2016-last update, *Faith in Cowal*. Available at <http://www.faithincowal.org/> [Feb/8, 2016].
- FARR, C., 1991. Worthy women on the Ruthwell Cross: woman as a sign in early Anglo-Saxon monasticism. In: C.E. KARKOV, M. RYAN and R.T. FARRELL, eds, *The Insular Tradition*. New York: Suny Press, pp. 45–62.
- FARRELL, S., 2001. Fife gravestones: a personal view. *Tayside and Fife Archaeological Journal*, 7, pp. 129–132.
- FAWCETT, R., 2002. *Scottish Medieval Churches. Architecture and Furnishings*. Stroud: Tempus.
- FAWCETT, R., 2011. *The Architecture of the Scottish Medieval Church 1100–1560*. New Haven and New York: Yale University Press.
- FAWCETT, R., 2013. Aspects of Scottish canopied tomb design. In: M. PENMAN, ed, *Monuments and Monumentality across Medieval and Early Modern Europe*. Donhead: Shaun Tyas, pp. 129–142.
- FERGUSON, L.M., 1999. Recording graveyards. In: RCAHMS, ed, *Monuments on Record Annual Review 1998–9*. Edinburgh: RCAHMS, pp. 47–49.
- FERGUSON, L.M., 2002. Record-taking and record-keeping for graveyards. In: A. DAKIN, ed, *Conservation of Historic Graveyards*. Edinburgh: Historic Scotland, pp. 22–26.
- FISHER, I., 2001. *Early Medieval Sculpture in the West Highlands and Islands*. Edinburgh: Society of Antiquaries of Scotland.
- FISHER, I., 2005. Christ's Cross down into the earth: some cross-bases and their problems. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 85–94.
- FISHER, I. and GREENHILL, F.A., 1972. Two unrecorded carved stones at Tower of Lethendy, Perthshire. *Proceedings of the Society of Antiquaries of Scotland*, 104 (1971–2), pp. 238–241.
- FLEMING, J., 2001. *Graffiti and the Writing Arts of Early Modern England*. London: Reaktion Books.
- FORSYTH, K., 1995a. The inscriptions on the Dupplin Cross. In: C. BOURKE, ed, *From the Isles of the North*. Belfast: HMSO, pp. 237–244.
- FORSYTH, K., 1995b. The ogham-inscribed spindle-whorl from Buckquoy: evidence for the Irish language in pre-Viking Orkney? *Proceedings of the Society of Antiquaries of Scotland*, 125, pp. 677–696.
- FORSYTH, K., 1997. Some thoughts on Pictish symbols as a formal writing system. In: D. HENRY, ed, *The Worm, the Germ and the Thorn. Pictish and Related Studies presented to Isabel Henderson*. Balgavies: Pinkfoot Press, pp. 85–98.
- FORSYTH, K., 2003. *Report on Early Medieval Carved Stones from Whithorn and vicinity in the Care of Historic Scotland*, March (unpublished report to Historic Scotland).
- FORSYTH, K., 2005. *Hic memoria perpetua: the early inscribed stones of southern Scotland in context*. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 113–134.
- FORSYTH, K., 2009. The Latinus Stone: Whithorn's earliest Christian monument. In: J. MURRAY, ed, *St Ninian and the Earliest Christianity in Scotland*. Oxford: British Archaeological Reports, pp. 19–41.
- FORSYTH, K., 2011a. An ogham-inscribed slab from St

- Ninian's Isle, found in 1876. In: R. BARROWMAN, ed, *The Chapel and Burial Ground on St Ninian's Isle, Shetland: Excavations Past and Present. The Society for Medieval Archaeology Monograph 32*. Wakefield: Society for Medieval Archaeology, pp. 15–25.
- FORSYTH, K., 2011b. *A preliminary investigation into the scholarly potential of 3D digital documentation of Early Medieval sculpture*, June 2011 (commissioned by the Centre for Digital Documentation and Visualization and Historic Scotland).
- FORSYTH, K. and DRISCOLL, S.T., 2009. Symbols of power in Ireland and Scotland, 8th–10th century. Available at <http://www.unioviado.es/reunido/index.php/TSP/article/viewFile/9481/9290>. In: F. CONDE and G. DE CASTRO VALDES, eds, *Symposium Internacional Poder y Simbología en Europa, siglos VIII–X, Oviedo, Spain, 22–27 September 2008 (Territorio Sociedad y Poder: Revista de Estudios Medievales 2)*. Gijón (Asturias): Trea, S.L., Ediciones, pp. 31–66.
- FORSYTH, K. and MALDONADO, A., 2012. *Report on early medieval carved stones from Iona in the care of Historic Scotland, March 2012 (unpublished report to Historic Scotland)*.
- FORSYTH, K. and MALDONADO, A., 2013. *Report on early medieval carved stones from Kirkmadrine, Galloway in the care of Historic Scotland, March 2013 (unpublished report to Historic Scotland)*.
- FORSYTH, K. and MALDONADO, A., In prep. *New work on Iona's early medieval carved stones* (paper presented to 7th International Insular Art Conference, Galway, July 2014).
- FOSTER, S.M., ed, 1998a. *The St Andrews Sarcophagus: A Pictish Masterpiece and its International Connections*. Dublin: Four Courts Press.
- FOSTER, S.M., 1998b. Discovery, recovery, context and display. In: S.M. FOSTER, ed, *The St. Andrews Sarcophagus: A Pictish Masterpiece and its International Connections*. Dublin: Four Courts Press, pp. 35–62.
- FOSTER, S.M., 2001. *Place, Space and Odyssey. Exploring the Future of Early Medieval Sculpture*. Rosemarkie: Groam House Museum.
- FOSTER, S.M., 2002a. Planning for early medieval sculpture. The recovery and recognition of sense, place and setting. In: L.M. GREEN and P.T. BIDWELL, eds, *Heritage of the North Sea Region. Conservation and Interpretation*. Donhead St Mary: Donhead, pp. 151–171.
- FOSTER, S.M., 2002b. Carved stones policy—new developments. In: A. DAKIN, ed, *Conservation of Historic Graveyards*. Edinburgh: Historic Scotland, pp. 1–4.
- FOSTER, S.M., 2005a. Know your properties, recognise the possibilities: Historic Scotland's strategy for the interpretation of early medieval sculpture in its care. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 315–323.
- FOSTER, S.M., 2010a. The curatorial consequences of being moved, moveable or portable: the case of carved stones. *Scottish Archaeological Journal*, 32(1), pp. 15–28.
- FOSTER, S.M., 2010b. Shaping up rock art in Scotland: past progress, future directions. In: T. BARNETT and K. SHARPE, eds, *Carving a Future for British Rock Art. New Directions for Research, Management and Presentation*. Oxford and Oakville: Oxbow Books, pp. 82–93.
- FOSTER, S.M., 2012. Pictish parallels for Gotland's Picture Stones. In: M.H. KARNELL, ed, *Gotland's Picture Stones. Bearers of an Enigmatic Legacy*. Gotland: Fornsalen Publishing, Gotland Museum, pp. 171–182.
- FOSTER, S.M., 2013a. Embodied energies, embedded stories: releasing the potential of casts of early medieval sculptures. In: J. HAWKES, ed, *Making Histories. Proceedings of the Sixth International Conference on Insular Art York 2011*. Donington: Shaun Tyas, pp. 339–355.
- FOSTER, S.M., 2013b. An Animate Landscape: Rock Art and the Prehistory of Kilmartin, Argyll, Scotland. *European Journal of Archaeology*, 16(4), pp. 742–747.
- FOSTER, S.M., 2015a. Circulating agency: the V&A, Scotland and the multiplication of plaster casts of 'Celtic crosses'. *Journal of the History of Collections*, 27(1), pp. 73–96.
- FOSTER, S.M., 2015b. Physical evidence for the early church in Scotland. In: P. BARNWELL, ed, *Buildings for Worship in Britain: Celtic and Anglo-Saxon*. Donhead: Shaun Tyas, pp. 68–91.
- FOSTER, S.M., 2016. Expiscation! Disentangling the later biography of the St Andrews Sarcophagus. In: F. HUNTER and A. SHERIDAN, eds, *Ancient Lives. Object, People and Place in Early Scotland. Essays for David V Clarke on his 70th Birthday*. Leiden: Sidestone Press, pp. 165–186.
- FOSTER, S.M., BLACKWELL, A. and GOLDBERG, M., 2014. The legacy of nineteenth-century replicas for object cultural biographies: lessons in duplication from 1830s Fife. *Journal of Victorian Culture*, 19(2), pp. 137–160.
- FOSTER, S.M. and CROSS, M., eds, 2005. *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney.
- FOSTER, S.M. and CURTIS, N.G.W., 2016. The thing about

- replicas: why historic replicas matter. *European Journal of Archaeology*, 19(1), pp. 122–148.
- FOSTER, S.M. and JONES, S., 2008. Recovering the biography of the Hilton of Cadboll cross-slab. In: H. JAMES, I. HENDERSON, S.M. FOSTER and S. JONES, eds, *A Fragmented Masterpiece. Recovering the Biography of the Hilton of Cadboll Pictish Cross-Slab*. Edinburgh: Society of Antiquaries of Scotland, pp. 205–284.
- FOWLE, F., 2015. The Celtic Revival in Britain and Ireland: reconstructing the past, c. AD 1600–1920. In: J. FARLEY and F. HUNTER, eds, *Celts: Art and Identity*. London: The British Museum/National Museums Scotland, pp. 234–259.
- FRASER, I., 2008. *The Pictish Symbol Stones of Scotland*. Edinburgh: RCAHMS.
- FRASER, I., 2013. Medieval funerary monuments in Scotland. In: M. PENMAN, ed, *Monuments and Monumentality across Medieval and Early Modern Europe*. Donhead: Shaun Tyas, pp. 9–17.
- FRASER, I., 2015. *Robert the Bruce Tomb reconstructed in 3D*. Focus, 2015, pp. 34–34.
- FRASER, I., forthcoming. The lost tomb of Robert the Bruce. *Proceedings of the Society of Antiquaries of Scotland*.
- FRASER, I. and HALLIDAY, S., 2011. The early medieval landscape of Donside, Aberdeenshire. In: S.T. DRISCOLL, J. GEDDES and M.A. HALL, eds, *Pictish Progress. New Studies on Northern Britain in the Early Middle Ages*. Leiden: Brill, pp. 307–333.
- GARRETT, B., 2009. *Celtic Knots with and beyond J Romilly Allen*. 2nd edn. Zurich: Yazee Publications.
- GEDDES, J., 2011. The problems of Pictish art, 1955–2009. In: S.T. DRISCOLL, J. GEDDES and M.A. HALL, eds, *Pictish Progress. New Studies on Northern Britain in the Early Middle Ages*. Leiden: Brill, pp. 121–134.
- GEDDES, J., forthcoming. *Early Medieval Sculpture at St Vigean, Angus*. Edinburgh: Society of Antiquaries of Scotland.
- GEFREH, T., 2015. *Place, space and time: Iona's early medieval high crosses in the natural and liturgical landscape*. PhD edn. University of Edinburgh.
- GERDWILKER, C., FORSTER, A., TORNEY, C. and HYSLOP, E., 2016. The impact of science on conservation practice: sandstone consolidation in Scottish built heritage. In: J.E.A. HUGHES, ed, *13th International Congress on the Deterioration and Conservation of Stone*, Paisley.
- GIESEN, M.J., UNG, A., WARKE, P.A., CHRISTGEN, B., MAZEL, A.D. and GRAHAM, D.W., 2014. Condition assessment and preservation of open-air rock art panels during environmental change. *Journal of Cultural Heritage*, 15(1), pp. 49–56.
- GIFFORD, J., 2014. The National Monument of Scotland. *Architectural Heritage*, 25, pp. 43–83.
- GLENDINNING, M., MACINNES, R. and MACKECHNIE, A., eds, 1996. *A History of Scottish Architecture. From the Renaissance to the Present Day*. Edinburgh: Edinburgh University Press.
- GONDEK, M., and NOBLE, G., 2011. Together as one: the landscape of the symbol stones at Rhynie, Aberdeenshire. In: S.T. DRISCOLL, J. GEDDES and M.A. HALL, eds, *Pictish Progress. New Studies on Northern Britain in the Early Middle Ages*. Leiden: Brill, pp. 281–305.
- GONDEK, M., 2006a. Early historic sculpture and landscape: a case study of Cladh a' Bhile, Ellary, Mid-Argyll. *Proceedings of the Society of Antiquaries of Scotland*, 136, pp. 237–258.
- GONDEK, M., 2006b. Investing in sculpture: power in early-historic Scotland. *Medieval Archaeology*, 50, pp. 105–142.
- GONDEK, M., 2007. Pictish symbol stones: caught between prehistory and history. In: A. MAZEL, G. NASH and C. WADDINGTON, eds, *Art as Metaphor: The Prehistoric Rock-Art of Britain*. Oxford: Archaeopress, pp. 69–89.
- GONDEK, M., 2015. *Building blocks: structural contexts and carved stones in early medieval northern Britain. Early Medieval Stone Monuments. Materiality, Biography, Landscape*. Woodbridge: Boydell & Brewer, pp. 87–113.
- GORDON, C.A., 1956. Carving technique on the symbol stones of north-east Scotland. *Proceedings of the Society of Antiquaries of Scotland*, 88 (1954–6), pp. 40–46.
- GOSDEN, C. and MARSHALL, Y., 1999. The cultural biography of objects. *World Archaeology*, 31(2), pp. 169–178.
- GOW, I., 2006. *Scotland's Lost Houses*. London: Aurum.
- GRAHAM, A., 1958. Headstones in post-Reformation Scotland. *Proceedings of the Society of Antiquaries of Scotland*, 91 (1957–8), pp. 1–9.
- GRANT, J., 1881. *Cassell's Old and New Edinburgh. Original Manuscript: NLS: MS 293. 1st edn*. London: Cassell, Petter, Galpin.
- GRAY, T.E. and FERGUSON, L.M., 1997. *Photographing Carved Stones. A Practical Guide to Recording Scotland's Past*. Balgavies: Pinkfoot Press (for the National Committee on the Carved Stones of Scotland in association with Historic Scotland).
- GREENHILL, F.A., 1944. Notes on Scottish incised slabs. *Proceedings of the Society of Antiquaries of Scotland*, 78 (1943–4), pp. 80–91.
- GREENHILL, F.A., 1946. Notes on Scottish incised slabs. *Proceedings of the Society of Antiquaries of Scotland*,

- 80 (1945–6), pp. 43–61.
- GREENHILL, F.A., 1976. *Incised Effigial Slabs*. 2 vols. London: Faber & Faber.
- GULLANE AND DIRLETON HISTORY SOCIETY, 2009. *Life and Death in Dirleton Parish. A Social History Derived From Kirkyard Memorials*. Dirleton: Gullane and Dirleton History Society.
- GUSTAFSSON, A. and KARLSSON, H.2., 2014. *Authenticity in Practice. A Comparative Discussion of the Authenticity, Staging and Public Communication at Eight World Heritage Classified Rock Art Sites*. Lindome: Bricoleur Press.
- HALL, M.A., 2005a. A museum curator's adventures in Pictland. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 343–352.
- HALL, M.A., 2011. Tales from beyond the Pict: sculpture and its uses in and around Forteviot, Perthshire from the ninth century onwards. In: S.T. DRISCOLL, J. GEDDES and M.A. HALL, eds, *Pictish Progress. New Studies on Northern Britain in the Early Middle Ages*. Leiden: Brill, pp. 135–168.
- HALL, M.A., 2012a. Three stones, one landscape, many stories. Cultural biography and the early medieval sculptures of Inchyra and St Madoes, Carse of Gowrie, Perthshire, Scotland. In: S.H. DUDLEY, A.J. BARNES, J. BINNIE, J. PETROV and J. WALKLATE, eds, *Narrating Objects, Collecting Stories*. London and New York: Routledge, pp. 85–102.
- HALL, M.A., 2012b. Performing prehistory in early medieval Scotland: making sense of the meaning of masks on Pictish sculpture. In: H. MELLER and R. MARASZEK, eds, *Masken der Vorzeit in Europa (II). Internationale Tagung vom 19. bis 21. November 2010 in Halle (Saale)*. pp. 93–110.
- HALL, M.A., 2012c. Des Jeux Gravés dans la Pierre: Graffiti des cathédraux, monastères et églises paroissiales en Grande-Bretagne (The permanence of stone: medieval graffiti gaming boards from cathedrals, monasteries and parish churches in Britain). *Histoire et Image Médiévales Thématique*, 28, pp. 30–33.
- HALL, M.A., 2013a. Re-making, re-mediating and re-mythopoesis: the sculptured stone cross in popular cinema. In: J. HAWKES, ed, *Making Histories. Proceedings of the Sixth International Conference on Insular Art York 2011*. Donington: Shaun Tyas, pp. 399–415.
- HALL, M.A., 2014. The Meigle stones: a biographical overview. *Northern Studies*, 46, pp. 15–46.
- HALL, M.A., 2015a. *Lifeways in stone: memories and matter-reality in early medieval sculpture from Scotland*. *Early Medieval Stone Monuments. Materiality, Biography, Landscape*. Woodbridge: Boydell & Brewer, pp. 182–215.
- HALL, M.A., FORSYTH, K.F., HENDERSON, I., SCOTT, I.G., TRENCH-JELICOE, R. and WATSON, A., 2000. Of makings and meanings: towards a cultural biography of the Crieff Burgh Cross, Strathearn, Perthshire. *Tayside and Fife Archaeological Journal*, 6, pp. 154–188.
- HALL, M.A., FRASER, I. and SCOTT, I.G., 2011. From Holy Rood to estate folly: chapters in the cultural biography of the Goodlyburn Cross, Perthshire, Scotland. *Review of Scottish Culture*, 23, pp. 1–19.
- HALL, M.A., HENDERSON, I. and SCOTT, I.G., 2005. The early medieval sculptures from Murthly, Perthshire: An interdisciplinary look at people, politics and monumental art. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Maney/Society for Medieval Archaeology, pp. 293–314.
- HALL, M.A. and SCOTT, I.G., forthcoming. Forteviot, Dupplin, Invermay, Gask: The Forteviot assemblage of early medieval sculpture catalogue. In: E. CAMPBELL and S.T. DRISCOLL, eds, *Royal Forteviot: Forteviot in the first and second millennia AD*. York: Council for British Archaeology.
- HAMLIN, A.E., 2008. Bullauns and other stones. In: A.E. HAMLIN and T.E. KERR, *The Archaeology of Early Christianity in the North of Ireland*. Oxford: British Archaeological Reports Brit. Ser. 460, pp. 144–154.
- HARRISON, J.G., 2011. *Rebirth of a Palace. The Royal Court at Stirling Castle*. Edinburgh: Historic Scotland.
- HARVEY, J., FISHER, J. and HARRISON, J. 2011. *Stone: A Legacy and Inspiration for Art*. London: Black Dog.
- HAWKES, J., 1997. Old Testament heroes: iconographies of Insular sculptures. In: D. HENRY, ed, *The Worm, the Germ and the Thorn. Pictish and Related Studies presented to Isabel Henderson*. Balgavies: Pinkfoot Press, pp. 149–158.
- HAWKES, J., 2005. Figuring salvation: an excursus into the iconography of the Iona crosses. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 259–275.
- HAWKES, J., 2008. Programmes of salvation: the iconography of the crosses on Iona. In: J. HAWKES, H. DAMICO and C.E. KARKOV, eds, *Aedificia Nova: Studies in Honor of Rosemary Cramp*. Kalamazoo: Medieval Institute Press, pp. 198–225.
- HAWKES, J., 2009. Studying Early Christian sculpture in England and Ireland: the object of art history or

- archaeology? In: J. GRAHAM-CAMPBELL and M. RYAN, eds, *Anglo-Saxon/Irish Relations Before the Vikings. Proceedings of the British Academy* 157. London: Oxford University Press for the British Academy, pp. 397–408.
- HAY, I., 1931. *Their Name Liveth. The Book of The Scottish National War Memorial*. London: John Lane, The Bodley Head Limited.
- HEACS, 2009. *Report with Recommendations on the Long-Term Conservation of the Ecclesiastical Heritage in a Time of Demographic Change. Presented to Mike Russell, MSP, Minister for Culture, External Affairs and the Constitution, September 2009*. Edinburgh: HEACS.
- HENDERSON, G., 2013. Raven into dove: assimilation and conflation in the making of a sacred image. In: J. HAWKES, ed, *Making Histories. Proceedings of the Sixth International Conference on Insular Art York 2011*. Donington: Shaun Tyas, pp. 215–228.
- HENDERSON, I., 1958. The origin centre of the Pictish symbol stones. *Proceedings of the Society of Antiquaries of Scotland*, 91 (1957–8), pp. 44–60.
- HENDERSON, I., 1967. *The Picts*. London: Thames and Hudson.
- HENDERSON, I., 1971. The meaning of the Pictish symbol stones. In: E. MELDRUM, ed, *The Dark Ages in the Highlands*. Inverness: Inverness Field Club, pp. 53–88.
- HENDERSON, I.B., 1978. Sculpture north of the Forth after the take-over by the Scots. In: J. LANG, ed, *Anglo-Saxon and Viking Age Sculpture*. Oxford: British Archaeological Reports Brit. Ser. 49, pp. 47–74.
- HENDERSON, I.B., 1982. Pictish art and the Book of Kells. In: D. WHITELOCK, D. DUMWILLE and R. MCKITTERICK, eds, *Ireland in Early Medieval Europe: Studies in Memory of Kathleen Hughes*. Cambridge: Cambridge University Press, pp. 79–105.
- HENDERSON, I.B., 1983. Pictish vine-scroll ornament. In: A. CONNOR and D.V. CLARKE, eds, *From the Stone Age to the 'Forty-Five. Studies presented to R.B.K. Stevenson, former Keeper National Museum of Antiquities of Scotland*. Edinburgh: John Donald Publishers Ltd, pp. 243–268.
- HENDERSON, I.B., 1986. The 'David cycle' in Pictish art. In: J. HIGGITT, ed, *Early Medieval Sculpture in Britain and Ireland*. Oxford: British Archaeological Reports Brit. Ser. 152, pp. 87–123.
- HENDERSON, I., 1987a. *Early Christian monuments of Scotland* displaying crosses but no other ornament. In: A. SMALL, ed, *The Picts: A New Look at Old Problems*. Dundee: Oxford University Computing Service, pp. 45–58.
- HENDERSON, I., 1990. *The Art and Function of Rosemarkie's Pictish Monuments*. Rosemarkie: Groam House Museum.
- HENDERSON, I., 1993a. Introduction. The making of *The Early Christian Monuments of Scotland*. In: J.R. ALLEN and J. ANDERSON, eds, *The Early Christian Monuments of Scotland*. Balmavies: Pinkfoot Press, pp. thirteen–forty.
- HENDERSON, I., 1993b. The shape and decoration of the cross on Pictish cross-slabs carved in relief. In: R.M. SPEARMAN and J. HIGGITT, eds, *The Age of Migrating Ideas. Early Medieval Art in Northern Britain and Ireland*. Stroud: National Museums of Scotland/Alan Sutton Publishing, pp. 209–218.
- HENDERSON, I., 1994. The insular and continental context of the St Andrews Sarcophagus. In: B.E. CRAWFORD, ed, *Scotland in Dark Age Europe*. St Andrews: St John's House, pp. 71–102.
- HENDERSON, I., 2005. Fragments of significance: the whole picture. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 69–84.
- HENDERSON, I. and HENDERSON, G., 2004. *The Art of the Picts*. London: Thames and Hudson.
- HENRY, A., 2006. *Stone Conservation: Principles and Practice*. Shaftesbury: Donhead Publishing.
- HENRY, D., ed, 1997. *The Worm, the Germ and the Thorn. Pictish and Related Studies Presented to Isabel Henderson*. Balmavies: Pinkfoot Press.
- HIGGITT, J., 1982. The Pictish Latin inscription at Tarbat in Ross-shire. *Proceedings of the Society of Antiquaries of Scotland*, 112, pp. 300–321.
- HIGGITT, J., 2005. Towards a 'new ECMS': the proposal for a new Corpus of Early Medieval Sculpture in Scotland. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 375–379.
- HILL, P., 2003. The Stone of Destiny examined: an overview and discussion. In: R.D.E. WELANDER, D.J. BREEZE and T.O. CLANCY, eds, *The Stone of Destiny: Artefact and Icon*. Edinburgh: Society of Antiquaries of Scotland, pp. 11–31.
- HINGLEY, R., MOORE, H.L., TRISCOTT, J.E. and WILSON, G., 1997. The excavation of two later Iron Age fortified homesteads at Aldclune, Blair Atholl, Perth and Kinross. *Proceedings of the Society of Antiquaries of Scotland*, 127, pp. 407–466.
- HISTORIC ENVIRONMENT SCOTLAND, 2015. *Condition Monitoring System for properties in the care of Scottish Ministers and associated systems*. Available at <http://www.historic-scotland.gov.uk/hes-condition-monitoring-system.pdf>.

- HISTORIC ENVIRONMENT SCOTLAND, 2016. *Historic Environment Scotland Policy Statement*. Available at <https://www.historicenvironment.scot/advice-and-support/planning-and-guidance/legislation-and-guidance/historic-environment-scotland-policy-statement/>. Edinburgh: Historic Environment Scotland.
- HISTORIC SCOTLAND, 1994. Appendix in I. Maxwell, 'The preservation of Dark Age Sculpture'. In: E.O. BOWMAN and N.M. ROBERTSON, eds, *Stones, Symbols and Stories: Aspects of Pictish Studies. Proceedings from the Conferences of the Pictish Arts Society, 1992*. Edinburgh: Pictish Arts Society, pp. 3–18.
- HISTORIC SCOTLAND, 2003. *Emergency Measures for Historic Memorials. A Short Guide for Cemetery Managers*. Edinburgh: Historic Scotland.
- HISTORIC SCOTLAND, 2011. *Scottish Historic Environment Policy. December 2011*. Available at <http://www.historic-scotland.gov.uk/index/heritage/policy/shep.htm>. Edinburgh: Historic Scotland.
- HISTORIC SCOTLAND, 2013. *The Repair and Maintenance of War Memorials. Short Guide 3*. Edinburgh: Historic Scotland National Conservation Centre.
- HOLMES, S.M., 2013. 'Defyle not Chrysts Kirk with your carrion': William Durandus (c.1230–96), medieval burial and two tombs in Rome and Fife. In: M. PENMAN, ed, *Monuments and Monumentality across Medieval and Early Modern Europe*. Donhead: Shaun Tyas, pp. 212–223.
- HOLMES, S.M., 2015. *Sacred Signs in Reformation Scotland: Interpreting Worship, 1488–1590*. Oxford: Oxford University Press.
- HOLTORF, C., 2005. *From Stonehenge to Las Vegas. Archaeology as Popular Culture*. Lanham: Altamira Press.
- HOLTORF, C., 2013. On pastness: a reconsideration of materiality in archaeological object authenticity. *Anthropological Quarterly*, 86(2), pp. 427–443.
- HOWARD, D., 1996. The Kinnoull Aisle and Monument. *Architectural History*, 39, pp. 36–53.
- HOWARTH, D., 1991. Sculpture and Scotland 1540–1700. In: F. PEARSON, ed, *Virtue and Vision: Scotland and Sculpture 1540–1990*. Edinburgh: National Galleries of Scotland, pp. 27–37.
- HULL, D., 2003. *Celtic and Anglo-Saxon Art: Geometric Aspects*. Liverpool: Liverpool University Press.
- HUNTER, W.K., 1858. *History of the Priory of Coldingham from the Earliest Date to the Present Time. Compiled from the most Authentic Authors, Ancient and Modern*. Edinburgh: Sutherland and Knox.
- HYGEN, A., 2006. *The Rock Art Project 1996–2005. Final Report from the Directorate for Cultural Heritage*. Available at http://brage.bibsys.no/xmlui/bitstream/handle/11250/175756/1/Bergkunst_sluttrapport_eng.pdf. Oslo: Riksantikvaren.
- HYGEN, A. and BENGTTSSON, L., 2000. *Rock Carvings in the Borderlands. Bohuslän and Østfold*. Gothenburg: Warne Förlag.
- ICCROM, 13th International Congress on the Deterioration and Conservation of Stone. Available at <http://www.iccrom.org/classifieds/13th-international-congress-on-the-deterioration-and-conservation-of-stone/> [April/07, 2016].
- ICOMOS - ISCS, ICOMOS International Scientific Committee for Stone. Available at <http://iscs.icomos.org/> [April/07, 2016].
- INGLIS, J., 1987. Patterns in stone, patterns in population: symbol stones seen from beyond the Mounth. In: A. SMALL, ed, *The Picts: A New Look at Old Problems*. Dundee: Oxford University Computing Service, pp. 73–79.
- INKPEN, R.J., 1999. Gravestones: problems and potentials as indicators of historic changes in weathering. In: M.S. JONES and R.D. WAKEFIELD, eds, *Aspects of Stone Weathering, Decay and Conservation. Proceedings of the 1997 Stone Weathering and Atmospheric Pollution Network Conference (SWAPNET'97)*. London: Imperial College Press, pp. 16–27.
- INSH, F., 2014. *An aspirational era? Examining and defining Scottish visual culture 1620–1707*. Available at <http://ethos.bl.uk/OrderDetails.do?uin=uk.bl.ethos.646090>. PhD edn. University of Aberdeen.
- JAMES, H., HENDERSON, I., FOSTER, S.M. and JONES, S., 2008. *A Fragmented Masterpiece. Recovering the Biography of the Hilton of Cadboll Pictish Cross-Slab*. Edinburgh: Society of Antiquaries of Scotland.
- JAMES, H.F., 2005. Pictish cross-slabs: an examination of their original archaeological context. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 95–112.
- JEFFREY, S., 2003. *Three dimensional modeling of Scottish Early Medieval Sculpted Stones*. Available at http://archaeologydataservice.ac.uk/archives/view/jeffrey_2004/. PhD edn. University of Glasgow.
- JEFFREY, S., 2005. The missing dimension: future directions in digital recording of early medieval sculptured stone. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 353–36.
- JEFFREY, S., 2010. Resource discovery and curation of

- complex and interactive digital datasets. Available at <<http://radar.gsa.ac.uk/2871/>>. In: H. GARDNER and C. BAILEY, eds, *Re-visualising Visual Culture, AHRC ICT Methods Network*. London: Ashgate, pp. 45–60.
- JEFFREY, S., 2015. Challenging heritage visualisation: beauty, aura and democratisation. *Open Archaeology*, 1(1), pp. 144–152.
- JEFFREY, S., HALE, A., JONES, C., JONES, S. and MAXWELL, M., 2015. The ACCORD project: archaeological community co- production of research resources. In: F. GILIGNY, F. DJINDJIAN, L. COASTA, P. MOSCATI and S. ROBERT, eds, *CAA 2014— 21st Century Archaeology: Concepts, Methods and Tools. Proceedings of the 42nd Annual Conference on Computer Applications and Quantitative Methods in Archaeology*. Oxford: Archaeopress, pp. 289–295.
- JERVISE, A., 1875–79. *Epitaphs & Inscriptions from Burial Grounds & Old Buildings in the North-East of Scotland, 2 vols*. Edinburgh: Edmondston and Douglas.
- JOKILEHTO, J., 2006. *Considerations on authenticity and integrity in world heritage context*. Available at <http://www.cecibr.org/novo/revista/docs2006/CT-2006-44.pdf>. *City & Time*, 2(1 1.), pp. 1–16.
- JONES, A.M., COCHRANE, A., CARTER, C., DAWSON, I., DÍAZ-GUARDAMINO, M., KOTOULA, E. and MINKIN, L., 2015. Digital imaging and prehistoric imagery: a new analysis of the Folkton Drums. *Antiquity*, 89(347), pp. 1083–1095.
- JONES, A.M., FREEDMAN, D., O’CONNOR, B., LAMDIN-WHYMARK, H., TIPPING, R. and WATSON, A., 2011. *An Animate Landscape: Rock Art and the Prehistory of Kilmartin, Argyll, Scotland*. Oxford: Windgather.
- JONES, S., 2004. *Early Medieval Sculpture and the Production of Meaning, Value and Place: The Case of Hilton of Cadboll*. Available at <http://conservation.historic-scotland.gov.uk/publication-detail.htm?pubid=7893>. Edinburgh: Historic Scotland. Research Report.
- JONES, S., 2005. ‘That stone was born here and that’s where it belongs’: Hilton of Cadboll and the negotiations of identity, ownership and belonging. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland’s Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology, pp. 37–53.
- JONES, S., 2006a. Making place, resisting displacement: conflicting national and local identities in Scotland. In: L. SMITH, ed, *Cultural Heritage: Critical Concepts in Media and Cultural Studies, Volume 4*. London: Routledge, pp. 94–114.
- JONES, S., 2006b. “They made it a living thing didn’t they”: the growth of things and the fossilisation of heritage. In: R. LAYTON, S. SHENNAN and P. STONE, eds, *A Future for Archaeology: The Past in the Present*. London: UCL Press, pp. 107–126.
- JONES, S., 2009. Experiencing authenticity at heritage sites: some implications for heritage management and conservation. *Conservation and Management of Archaeological Sites*, 11(2), pp. 133–147.
- JONES, S., 2010. Negotiating authentic objects and authentic selves. Beyond the deconstruction of authenticity. *Journal of Material Culture*, 15(2), pp. 181–203.
- JONES, S., 2011. “Sorting stones”: monuments, memory and resistance in the Scottish Highlands. In: M.C. BEAUDRY and J. SYMONDS, eds, *Interpreting the Early Modern World, Contributions to Global Historical Archaeology*. New York: Springer Science and Business Media, pp. 113–139.
- JONES, S., 2016 online. Wrestling with the social value of heritage: problems, dilemmas and opportunities. *Journal of Community Archaeology and Heritage*. DOI:10.1080/20518196.2016.1993996.
- JONES, S., 2016 in press. Unlocking essences and exploring networks. Experiencing authenticity in heritage education settings. In: C. VAN BOXTEL, M. GREVER and S. KLEIN, eds, *Tangible Pasts? Questioning Heritage Education*. Oxford: Berghahn.
- JONES, S. and LEECH, S., 2015. *Valuing the Historic Environment: A Critical Review of Existing Approaches to Social Value. AHRC: Cultural Value Project Report*. Available at <https://www.escholar.manchester.ac.uk/uk-ac-man-scw:281849>. Manchester: University of Manchester.
- JONES, S. and YARROW, T., 2013. Crafting authenticity: an ethnography of conservation practice. *Journal of Material Culture*, 18(1), pp. 3–26.
- KAINS-JACKSON, C.P., 1880. *Our Ancient Monuments and the Land around them*. London: Elliot Stock.
- KARKOV, C.E. and ORTON, F., eds, 2003. Theorizing Anglo-Saxon Stone Sculpture. *Medieval European Studies IV*. Morgantown: West Virginia University Press.
- KASTEN, M., In prep. *Three-dimensional Imaging of the Govan Stones*. PhD edn. University of Glasgow.
- KELLY, D., 1993. The relationships of the crosses of Argyll: the evidence of form. In: R.M. SPEARMAN and J. HIGGITT, eds, *The Age of Migrating Ideas. Early Medieval Art in Northern Britain and Ireland*. Stroud: National Museums of Scotland/Alan Sutton Publishing, pp. 219–229.
- KEPPIE, L.J.F., 1979. *Roman Distance Slabs from the Antonine Wall*. Glasgow: Hunterian Museums Publications.
- KEPPIE, L.J.F., 1983. Roman inscriptions from Scotland: some additions and corrections to RIB I. *Proceedings of the Society of Antiquaries of Scotland*, 113, pp. 391–404.
- KEPPIE, L.J.F., 1998a. *Scotland’s Roman Remains: An Introduction and Handbook*. Edinburgh: John Donald.

- KEPPIE, L.J.F., 1998b. *Roman Inscribed and Sculptured Stones in the Hunterian Museum, University of Glasgow*. Cambridge: Society for the Promotion of Roman Studies.
- KEPPIE, L.J.F., 2014a. The Hunterian collection and its Museum. *Journal of the History of Collections*, 26(3), pp. 355–362.
- KEPPIE, L.J.F. and ARNOLD, B.J., 1984. *Corpus Signorum Imperii Romani (Corpus of Sculpture of the Roman World) Great Britain Volume 1, Fascicle 4*. Oxford: British Academy.
- KIDD, C., 1993. *Subverting Scotland's Past: Scottish Whig Historians and the Creation of an Anglo-British Identity 1689–1830*. Cambridge: Cambridge University Press.
- KILPATRICK, K.A., 2011. The iconography of the Papil Stone: sculptural and literary comparisons with a Pictish motif. *Proceedings of the Society of Antiquaries of Scotland*, 141, pp. 159–205.
- KING, A., 1993. *Memorials of the Great War in Britain: The Symbolism and Politics of Remembrance*. Oxford: Berg.
- KITZLER ÅHFELDT, L., 2013. 3D-scanning of Gotland Picture Stones. With supplementary material: Digital catalogue of 3D data. *Journal of Nordic Archaeological Science*, 18, pp. 55–65.
- KRUSE, A., 2013. Columba and Jonah—a motif in the dispersed art of Iona. *Northern Studies*, 45, pp. 1–26.
- KUPFER, M., 2011. The cult of images in light of pictorial graffiti at Doué-la-Fontaine. *Early Medieval Europe*, 19(2), pp. 125–152.
- LACAILLE, A.D., 1953. Stone basins. *Glasgow Archaeological Society Transactions*, 12, pp. 41–93.
- LAING, L., 2000. The chronology and context of Pictish relief sculpture. *Medieval Archaeology*, 44, pp. 81–114.
- LANG, J.T., 1972. Hogback monuments of Scotland. *Proceedings of the Society of Antiquaries of Scotland*, 105 (1972–4), pp. 206–235.
- LANKESTER, P. and SCOTT, M., 1981. An interim list of Scottish 'Lowland' effigies down to 1560. *Glasgow Archaeological Society Bulletin*, 12(Autumn), pp. 3–10.
- LATOUR, B. and LOWE, A., 2011. The migration of the aura, or how to explore the original through its facsimiles. In: T. BARTSCHERER and R. COOVER, eds, *Switching Codes. Thinking Through Digital Technology in the Humanities and the Arts*. Chicago and London: The University of Chicago Press, pp. 275–297.
- LEE, R., PHILIP, J. and ZIMAN, P., 2010. *Pictish symbols revealed as a written language through application of Shannon entropy*. Available at <<http://rspa.royalsocietypublishing.org/content/royprsa/early/2010/03/26/rspa.2010.0041.full.pdf>>. *Proceedings of the Royal Society A*, pp. 1–16.
- LERMA, J.L. and MUIR, C., 2014. Evaluating the 3D documentation of an early Christian upright stone with carvings from Scotland with multiples images. *Journal of Archaeological Science*, 46, pp. 311–318.
- LERMA, J.L., NAVARRO, S., CABRELLES, M. and VILLAVERDE, V., 2010. Terrestrial laser scanning and close range photogrammetry for 3D archaeological documentation: the Upper Palaeolithic Cave of Parpalló as a case study. *Journal of Archaeological Science*, 37(3), pp. 499–507.
- LOWE, C., 2006. *Excavations at Hoddam, Dumfriesshire*. Edinburgh: Society of Antiquaries of Scotland.
- LOWE, C., 2008. *Inchmarnock. An Early Historic Island Monastery and its Archaeological Landscape*. Edinburgh: Society of Antiquaries of Scotland.
- MAC LEAN, D., 1985. *Early medieval sculpture in the West Highlands and Islands of Scotland*. PhD edn. University of Edinburgh.
- MAC LEAN, D., 1993. Snake-bosses and redemption at Iona and in Pictland. In: R.M. SPEARMAN and J. HIGGITT, eds, *The Age of Migrating Ideas. Early Medieval Art in Northern Britain and Ireland*. Stroud: National Museums of Scotland/Alan Sutton Publishing, pp. 247–253.
- MAC LEAN, D., 1997. Maelrubai, Applecross and the late Pictish contribution west of Druimalban. In: D. HENRY, ed, *The Worm, the Germ and the Thorn. Pictish and Related Studies presented to Isabel Henderson*. Balgavies: Pinkfoot Press, pp. 173–187.
- MACARTHUR, M., 2003. *Iona Celtic Art. The Work of Alexander and Euphemia Ritchie*. Strathpeffer: The New Iona Press.
- MACDONALD, G., 1936. Post-Reformation tombstones in the cathedral churchyard, St Andrews. *Proceedings of the Society of Antiquaries of Scotland*, 70 (1935–6), pp. 40–119.
- MACDONALD, M., 2000. *Scottish Art*. London: Thames & Hudson.
- MACGIBBON, D. and ROSS, T., 1887–92. *Castellated and Domestic Architecture of Scotland from the Twelfth to the Eighteenth Century*, 5 vols. Edinburgh: David Douglas.
- MACGIBBON, D. and ROSS, T., 1896–97. *The Ecclesiastical Architecture of Scotland, from the Earliest Christian Times to the Seventeenth Century*. 3 vols. Edinburgh: D Douglas.
- MACGREGOR, G., 2009. Changing people, changing landscapes: excavations at the Carrick, Midross, Loch Lomond. *Historic Argyll*, 14, pp. 8–13.

- MACK, A., 1997. *Field Guide to the Pictish Symbol Stones*. Balgavies: Pinkfoot Press.
- MACK, A., 1998. *The Association of Pictish Symbol Stones with Ecclesiastical, Burial, and 'Memorial' Areas*. Balgavies: Pinkfoot Press.
- MACLEAN, H., 2014. *Gilding the Thistle: the amplification of Scottish identity in Australian cemeteries*. Paper presented at *Death in Scotland, from the Medieval to the Modern: Beliefs, Attitudes and Practices conference 2 February 2014*. Abstract available at <<https://uq.academia.edu/HildaMaclean>>.
- MACLEOD, J., 2010a. Memorials and location: local versus national identity and the Scottish National War Memorial. *The Scottish Historical Review*, 89(1), pp. 73–95.
- MACLEOD, J., 2010b. “By Scottish hands, with Scottish money, on Scottish soil”: the Scottish National War Memorial and national identity. *The Journal of British Studies*, 49(Special Issue 01), pp. 73–96.
- MACMILLAN, D., 2001. *Scottish Art in the 20th Century*. Revised 2nd edn. Edinburgh: Mainstream Publishing.
- MACPHERSON, A., 1890. Scottish sacrament houses. *Proceedings of the Society of Antiquaries of Scotland*, 25 (1890–91), pp. 89–116.
- MAIR, C., 1988. *Mercat Cross and Tolbooth: Understanding Scotland's Old Burghs*. Edinburgh: John Donald Publishers Ltd.
- MARKHAM, M., 1997. Geology and archaeology: a search for the source rock used by British Neolithic axe makers. *Open University Geological Society Journal*, 18(3), pp. 48–57.
- MÁRKUS, M., 2003. Historic Scotland *ex situ* carved and moulded stones project. *Discovery and Excavation in Scotland*, 4, pp. 7–10.
- MASON, R., 2002. Assessing values in conservation planning: methodological issues and choices. In: M. DE LA TORRE, ed, *Assessing the Values of Cultural Heritage*. Available at http://www.getty.edu/conservation/publications_resources/pdf_publications/pdf/assessing.pdf. Los Angeles: The Getty Conservation Institute, pp. 5–30.
- MAXWELL, I., 2005. Scotland's early medieval sculpture in the 21st century: a strategic overview of conservation problems, maintenance and replication methods. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 159–174.
- MAXWELL, I., NANDA, R. and URQUHART, D., 2001. *Conservation of Historic Graveyards. Guide for Practitioners 2*. Edinburgh: Historic Scotland.
- MCCAIG, N., 'True Ways of Knowing', *Measures*, London: Chatto and Windus, (reprinted in *Collected Poems*, London: Chatto and Windus, 1990, 141–142).
- MCCLANAHAN, A., 2004. *The Heart of Neolithic Orkney in its contemporary contexts: A case study in heritage management and community values*. Unpublished report. Available at <http://www.historic-scotland.gov.uk/orkney-case-study.pdf>.
- MCCORMICK, E.L., 2010. *Crosses in circulation: processes and patterns of acquisition and display of early medieval sculpture in the National Museums of Britain and Ireland, circa 1850 to 1950*. PhD edn. University of York.
- MCCULLOCH, W.T., 1857. Notices of the City Cross of Edinburgh, &c, illustrated by a model and drawings of the existing remains. *Proceedings of the Society of Antiquaries of Scotland*, 2 (1854–7), pp. 287–294.
- MCFARLAND, E., 2004. Researching death, mourning and commemoration in early modern Scotland. *Journal of Historical Studies*, 24(1), pp. 20–44.
- MCFARLAND, E.W., 2010. Commemoration of the South African War in Scotland, 1900–10. *The Scottish Historical Review*, 89(2: 228), pp. 194–223.
- MCGUINNESS, D., 2013. Bullaun stones and early Medieval pilgrimage at Glendalough. In: M. HERITY, ed, *Ordnance Survey Letters Wicklow and Carlow: Letters relating to the Antiquities of the Counties of Wicklow and Carlow containing information collected during the progress of the Ordnance Survey 1838–1840*. Dublin: Four Masters Press, pp. 14–24.
- MCKEAN, C., 2001. *The Scottish Chateau: The Country House of Renaissance Scotland*. Stroud: Sutton Publishing Ltd.
- MCKENZIE, R., 2002. *Public Sculpture of Glasgow*. Liverpool: Liverpool University Press.
- MCREBERTS, D., 1965. Scottish sacrament houses. *Transactions of the Scottish Ecclesiological Society*, 15(3), pp. 33–56.
- MELVILLE, N.H.T., 2000. *The incised effigial stone at Foveran, Aberdeenshire*. Accessible at <http://jwma.ejmas.com/articles/2000/melville/melville_2.htm>. *Journal of Western Martial Art*, January.
- MEYER, K.S., 2005. Bird, beast or fish? Problems of identification and interpretation of the iconography carved on the Tarbat peninsula cross-slabs. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 243–257.
- MEYER, K., 2011. Saints, scrolls and serpents: theorising a Pictish liturgy on the Tarbat peninsula. In: S.T. DRISCOLL, J. GEDDES and M.A. HALL, eds, *Pictish Progress. New Studies on Northern Britain in the Early*

- Middle Ages*. Leiden: Brill, pp. 169–200.
- MILLER, S. and RUCKLEY, N.A., 2005. The role of geological analysis of monuments: a case study from St Vigean and related sites. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 277–292.
- MONTEITH, R., 1704. *An Theater of Mortality: or, the Illustrious Inscriptions Extant upon the Several Monuments ... within the Gray-Friars church-yardEdinburgh: Heirs and Successors of Andrew Anderson*.
- MOWBRAY, C.L., 1936. Eastern influence on carvings at St Andrews and Nigg, Scotland. *Antiquity*, 10, pp. 428–440.
- MUDGE, M., MALZBENDER, T., CHALMERS, A., SCOPIGNO, R., DAVIS, J., WANG, O., GUNAWARDANE, P., ASHLEY, M., DOERR, M., PROENCA, A. and BARBOSA, J., 2008. *Image-Based Empirical Information Acquisition, Scientific Reliability, and Long-Term Digital Preservation for the Natural Sciences and Cultural Heritage*. Available at <http://culturalheritageimaging.org/What_We_Do/Publications/eurographics2008/>. e-book: Eurographics Association.
- MUDGE, M., MALZBENDER, T., SCHROER, C. and LUM, M., 2006. New Reflection Transformation Imaging methods for rock art and multiple-viewpoint display. In: M. IOANNIDES, D. ARNOLD and F. NICCOLUCCI, eds, *Proceedings of the 7th International Symposium on Virtual Reality, Archaeology and Cultural Heritage (VAST 2006)*. e-book: Eurographics Association, pp. 195–200.
- MUIR, C., 2005. The containment of Scottish carved stones *in situ*: an environmental study of the efficacy of glazed enclosures. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 175–186.
- MUIR, T.L.S., 1861. *Characteristics of Old Church Architecture Etc. in the Mainland and Western Islands of Scotland*. London: London.
- MUÑOZ-VIÑAS, S., 2011. *Contemporary Theory of Conservation*. London: Routledge.
- MUNRO, D.M. and O'GRADY, O.J.T., 2015. *Boundary stones in the Lomond Hills: enclosure of the Falkland Community, Fieldwork Report Conservation Assessment. Unpublished report for Living Lomonds Landscape Partnership*. Available at http://www.livinglomonds.org.uk/wp-content/uploads/2015/10/LLLP-WR1818-Boundary-Stone-Survey-Report_OJT-Heritage-Final-Version-website.pdf.
- MYTUM, H., 2004. *Mortuary Monuments and Burial Grounds of the Historic Period*. New York, Boston, Dordrecht, London, Moscow: Kluwer Academic/Plenum Publishers.
- MYTUM, H., 2006. Popular attitudes to memory, the body, and social identity: the rise of external commemoration in Britain, Ireland and New England. *Post-Medieval Archaeology*, 40(1), pp. 96–110.
- MYTUM, H., 2009. Mortality symbols in action: Protestant and Catholic early 18th century West Ulster. *Historical Archaeology*, 43(1), pp. 160–182.
- NASH, G. and CHIPPINDALE, C., eds, 2002. *European Landscapes of Rock-Art*. London and New York: Routledge.
- NEEDHAM, S. and COWIE, T., 2012. The halberd pillar at Ri Cruin cairn, Kilmartin, Argyll. In: A. COCHRANE and A.M. JONES, eds, *Visualising the Neolithic: Abstraction, Figuration, Performance, Representation*. Oxford: Oxbow Books, pp. 89–110.
- NICOLL, E.H., ed, 1995. *A Pictish Panorama: The Story of the Picts and a Pictish Bibliography (compiled by Jack Burt)*. Balgavies: Pinkfoot Press.
- NIVEN, K., JEFFREY, S. and RICHARDS, J.D., 2014. Archiving three-dimensional archaeology: new technologies, new solutions? In: G. EARL, T. SLY, A. CHRYSANTHI, P. MURRIETA-FLORES, C. PAPADOPOULOS, I. ROMANOWSKA and D. WHEATLEY, eds, *Archaeology in the Digital Era Volume II. e-papers from the 40th Annual Conference of Computer Applications and Quantitative Methods in Archaeology (CAA)*, Southampton, UK, 26–30 March 2012. Available at <<http://dare.uva.nl/aup/en/record/500958>>. e-book: Amsterdam University Press, pp. 289–294.
- NORMAN, A.V.B., 1963. A Scottish military effigy of the 15th century. *Scottish Art Review*, special no, Scottish Weapons, 9(1), pp. 24, 34–25, 35.
- Ó CARRAGÁIN, É., 2005. *Ritual and the Rood: Liturgical Images and the Old English Poems of the Dream of the Rood Tradition*. London; Toronto; New York: British Library; University of Toronto Press.
- OKASHA, E., 1985. The non-ogham inscriptions of Pictland. *Cambridge Early Medieval Studies*, 9, pp. 43–69.
- OLIVER, J. and NEAL, T., 2010. *Wild Signs: Graffiti in Archaeology and History*. Oxford: Hadrian Books/British Archaeological Reports Int Ser 2074.
- ORAM, R., 2009. The medieval bishops of Whithorn, their cathedral and their tombs. In: C. LOWE, ed, 'Clothing for the soul divine': *Burials at the Tomb of St Ninian. Excavations at Whithorn Priory, 1957–67. Historic Scotland Archaeology Report no 3*. Edinburgh: Historic Scotland, pp. 131–165.
- ORAM, R.D., 2013. Bishop's tombs in medieval Scotland. In: M. PENMAN, ed, *Monuments and Monumentality across Medieval and Early Modern Europe*. Donhead: Shaun Tyas, pp. 171–198.

- ORTON, F. and WOOD, I. WITH LEES, C., 2007. *Fragments of History: Rethinking the Ruthwell and Bewcastle Monuments*. Manchester: Manchester University Press.
- PAISLEY REG., 1832; 1877. *Registrum Monasterii de Passelet: cartas, privilegia, conventiones aliaque munimenta*. Maitland Club/New Club.
- PEACOCK, D.P.S., 1997. Charlemagne's black stones: the reuse of Roman columns in early medieval Europe. *Antiquity*, 71, pp. 709–715.
- PEARSON, F., ed, 1991a. *Virtue and Vision: Scotland and Sculpture 1540–1990*. Edinburgh: National Galleries of Scotland.
- PENMAN, M., ed, 2013a. *Monuments and Monumentality across Medieval and Early Modern Europe*. Donington: Shaun Tyas.
- PENMAN, M., 2013b. A programme for royal tombs in Scotland? A review of the evidence, c.1093–c.1542. In: M. PENMAN, ed, *Monuments and Monumentality across Medieval and Early Modern Europe*. Donhead: Shaun Tyas, pp. 239–253.
- PLESCH, V., 2002. Memory on the wall: graffiti on religious wall paintings. *Journal of Medieval and Early Modern Studies*, 32(1), pp. 167–198.
- PRAY NOW GROUP, 2015. *Living Stones. Pray Now Weekly Devotions & Monthly Prayer Activities*. Norwich: St Andrews Press.
- PRITCHARD, V., 1967. *English Medieval Graffiti*. Cambridge: Cambridge University Press.
- PROUDFOOT, E., 1998. St Andrews Cathedral graveyard survey. *Tayside and Fife Archaeological Journal*, 1, pp. 248–259.
- PULLIAM, H., 2013. Blood, water and stone: the performative cross. In: J. HAWKES, ed, *Making Histories. Proceedings of the Sixth International Conference on Insular Art York 2011*. Donington: Shaun Tyas, pp. 262–278.
- PULLIAM, H., 2015. Tracing the Celts? Survival and transformation, c. AD 800–1600. In: J. FARLEY and F. HUNTER, eds, *Celts: Art and Identity*. London: The British Museum/National Museums Scotland, pp. 206–233.
- PYE, E., 2001. *Caring for the Past: Issues in Conservation for Archaeology and Museums*. London: James & James Science.
- QLTR, *Code of Practice for Treasure Trove in Scotland*. Available at <http://www qltr.gov.uk/content/code-practice-treasure-trove-scotland-0> [April/04, 2016].
- RAEBURN, G.D., 2012. *The long reformation of the dead in Scotland*. PhD edn. University of Durham.
- RAY, J., RUGG, J., RUTHERFORD, S., LOE, L., HIND, J. and SPANDL, K., 2014. *Cemeteries, Churchyards and Burial Grounds: Devising and Applying a Significance Framework. Unpublished report for English Heritage*. Available at <https://historicengland.org.uk/images-books/publications/cemeteries-churchyards-and-burial-grounds-significance-framework/Oxford-Archaeology>.
- RCAHMS, 1982. *Argyll: An Inventory of the Monuments, Volume 4. Iona*. Glasgow: HMSO.
- RCAHMS, 1985. *Pictish Symbol Stones. A Handlist*. Edinburgh: RCAHMS.
- RCAHMS, 1988. *Argyll: An Inventory of the Monuments, Volume 6. Mid Argyll & Cowal. Prehistoric and Early Historic Monuments*. Glasgow: HMSO.
- RCAHMS, 1994a. *South-East Perth. An Archaeological Landscape*. Edinburgh: RCAHMS.
- RCAHMS, 1994b. *Pictish Symbol Stones. A Handlist*. Edinburgh: RCAHMS.
- RCAHMS, 1999. *Pictish Symbol Stones. An Illustrated Gazetteer*. Edinburgh: RCAHMS.
- RCAHMS, 2007a. *In the Shadow of Bennachie. A Field Archaeology of Donside, Aberdeenshire*. Edinburgh: RCAHMS/Society of Antiquaries of Scotland.
- RCAHMS, 2007b. *Early Medieval Carved Stones at Brechin*. Edinburgh: RCAHMS.
- RCAHMS, 2008a. *Canna: The Archaeology of a Hebridean Landscape*. Edinburgh: RCAHMS.
- RCAHMS, 2008b. *Early Medieval Sculpture in Angus Council Museums*. Edinburgh: RCAHMS.
- REDKNAP, M. and LEWIS, J.M., 2007. *A Corpus of Early Inscribed Stones and Stone Sculpture in Wales. Volume I. Breconshire, Glamorgan, Monmouthshire, Radnorshire, and geographically contiguous areas of Herefordshire and Shropshire*. Cardiff: University of Wales Press.
- RICHARDS, J.D., JEFFREY, S. and NIVEN, K., 2013. Preserving our digital heritage: information systems for data management and preservation. In: E. CH'NG, V. GAFFNEY and CHAPMAN H., eds, *Visual Heritage in the Digital Age*. New York: Springer Press, pp. 313–329.
- RICHARDSON, J.S., 1928. Fragments of altar retables of late medieval date in Scotland. *Proceedings of the Society of Antiquaries of Scotland*, 62 (1927–8), pp. 197–224.
- RICHARDSON, J.S., 1964. *The Medieval Stone Carver in Scotland*. Edinburgh: Edinburgh University Press.
- RIEGL, A., 1982 [1902]. *The modern cult of monuments: its character and origins*. Reprinted in *Oppositions* 25. New York: Rizzoli.

- RITCHIE, A., ed, 1994a. *Govan and its Early Medieval Sculpture*. Stroud: Alan Sutton Publishing Ltd.
- RITCHIE, A., 1995. Meigle and lay patronage in Tayside in the 9th and 10th centuries AD. *Tayside and Fife Archaeological Journal*, 1, pp. 1–10.
- RITCHIE, A., 2004. *Hogback Gravestones at Govan and Beyond*. Glasgow: Friends of Govan Old.
- RITCHIE, J.N.G., 1997. Recording Early Christian monuments in Scotland. In: D. HENRY, ed, *The Worm, the Germ and the Thorn. Pictish and Related Studies presented to Isabel Henderson*. Balgavies: Pinkfoot Press, pp. 119–128.
- RITCHIE, J.N.G., 1998. *Recording Early Christian Monuments in Scotland*. Rosemarkie: Groam House Museum.
- ROBERTSON, N.M., 1997. The early medieval carved stones of Fortingall. In: D. HENRY, ed, *The Worm, the Germ and the Thorn. Pictish and Related Studies presented to Isabel Henderson*. Balgavies: Pinkfoot Press, pp. 133–148.
- RODGER, J., 2014. McCaig's Tower and a Scottish monumental tradition. *Journal of Scottish Historical Studies*, 34(1), pp. 90–106.
- RODWELL, W., 2013. *The Coronation Chair and Stone of Scone: History, Archaeology and Conservation*. Oxford and Oakville: Oxbow Books.
- ROSS, A., 2015. *Land Assessment and Lordship in Medieval Northern Scotland*. Turnhout: Brepols.
- ROSS, T., 1890. The ancient sundials of Scotland. *Proceedings of the Society of Antiquaries of Scotland*, 24 (1889–90), pp. 161–273.
- RUGG, J., 2000. Defining the place of burial: what makes a cemetery a cemetery? *Mortality*, 5(3), pp. 259–273.
- RUSKIN, J., 1849. *The Seven Lamps of Architecture* London: Smith, Elder and Co.
- RUSSELL, R. and WINKWORTH, K., 2009. *Significance 2.0: A Guide to Assessing the Significance of Collections*. Available at <<http://pandora.nla.gov.au/pan/112443/20101122-1236/significance.collectionscouncil.com.au/pdf/bw/bSignificance20.pdf>>. 2nd edn. Rundle Mall: Collections Council of Australia Ltd.
- RYDER, P., 2001. *The Cross Slab Grave Covers of Cumbria*. Kendal: Cumbria County Council.
- SAMSON, R., 1992. The reinterpretation of the Pictish symbols. *Journal of the British Archaeological Association*, 145, pp. 29–65.
- SCOTT, I.G., 1997. Illustrating early medieval carved stones. In: D. HENRY, ed, *The Worm, the Germ and the Thorn. Pictish and Related Studies presented to Isabel Henderson*. Balgavies: Pinkfoot Press, pp. 129–132.
- SCOTT, I.G. and RITCHIE, A., 2009. *Pictish and Viking-Age Carvings from Shetland*. Edinburgh: RCAHMS.
- SCOTT, I.G. and RITCHIE, A., 2014. Pictish symbols stones and early cross-slabs from Orkney. *Proceedings of the Society of Antiquaries of Scotland*, 144, pp. 169–204.
- SCOTT, R., 2005. *The cemetery and the city: the origins of Glasgow Necropolis, 1825–1857*. PhD edn. Department of History (Scottish History), University of Glasgow.
- SCOTTISH CULTURAL ENTERPRISE, 2011. *Royal Commission on the Ancient and Historical Monuments of Scotland. Scotland's Rural Past. Final Evaluation Report. Detailed Report*. Available at <http://www.scotlandsruralpast.org.uk/images/pdfs/SRPFinalReport.pdf>. Edinburgh.
- SCOTTISH EXECUTIVE, 2005. *Carved Stones. Scottish Executive Policy and Guidance*. Edinburgh: Historic Scotland.
- SCOTTISH GOVERNMENT, 2014. *Our Place in Time. The Historic Environment Strategy for Scotland*. Available at <http://www.gov.scot/Resource/0044/00445046.pdf>. Edinburgh: Scottish Government.
- SCOTTISH GOVERNMENT, 2015-last update, *Scotland Performs*. Available at <http://www.gov.scot/About/Performance/scotPerforms> [Feb/2016, 2015].
- SERIGHT, S.E., 1999. *George Bain. Master of Celtic Design*. Rosemarkie: Groam House Museum.
- SIMPSON, J.Y., 1866. On ancient sculpturings of cups and concentric rings. *Proceedings of the Society of Antiquaries of Scotland*, 6 (1864–6), pp. 1–134.
- SMAILES, H.E., 2014. A pride of lions: Noel Paton and the National Wallace Monument. *Architectural Heritage*, 25, pp. 85–106.
- SMALL, A., ed, 1987. *The Picts. A New Look at Old Problems*. Dundee: Oxford University Computing Service.
- SMALL, J.W., 1900. *Scottish Market Crosses*. Stirling: E Mackay.
- SOMERVILLE, A.R., 1987. The ancient sundials of Scotland. *Proceedings of the Society of Antiquaries of Scotland*, 117, pp. 233–264.
- SOMERVILLE, A.R., 1990. *The Ancient Sundials of Scotland*. London: Rogers Turner.
- SPICER, A., 2000. Defyle not Christ's Kirk with your carrion: the development of burial aisles in Post-Reformation Scotland. In: B. GORDON and P. MARSHALL, eds, *The Place of the Dead: Death and Remembrance in Late Medieval and Early Modern Europe* Cambridge: Cambridge University Press, pp. 149–169.
- SPROAT, R., 2010. Ancient symbols, computational linguistics, and the reviewing practices of the general science journals. *Computational Linguistics*, 36(3), pp. 585–594.

- STEER, K.A. and BANNERMAN, J.W.M., 1977. *Late Medieval Monumental Sculpture in the West Highlands*. Edinburgh: RCAHMS.
- STEPHEN, W.M., 1968. Wayside markers in Fife. *Proceedings of the Society of Antiquaries of Scotland*, 100 (1967–8), pp. 179–184.
- STEVENSON, J.B., 1993. Cup- and ring-markings at Ballochmyle, Ayrshire. *Glasgow Archaeological Journal*, 18, pp. 33–40.
- STEVENSON, R.B.K., 1955 (repr. 1980). Pictish Art. In: F.T. WAINWRIGHT, ed, *The Problem of the Picts*. Perth: Methven Press, pp. 97–128.
- STEVENSON, R.B.K., 1956. The chronology and relationships of some Irish and Scottish crosses. *Journal of the Royal Society of Antiquaries of Ireland*, 86, pp. 84–96.
- STEVENSON, R.B.K., 1959. The Inchyra stone and some other unpublished early Christian monuments. *Proceedings of the Society of Antiquaries of Scotland*, 92 (1958–9), pp. 33–55.
- STEVENSON, R.B.K., 1971. Sculpture in Scotland in the 6th–9th centuries A.D. In: V. MILOJCIC, ed, *Kolloquium über Spätantike und frühmittelalterliche Skulptur, Heidelberg 1970*. pp. 65–74.
- STEVENSON, R.B.K., 1981a. The museum, its beginnings and its development. Part II: the National Museum to 1954. In: A.S. BELL, ed, *The Scottish Antiquarian Tradition. Essays to Mark the Bicentenary of the Society of Antiquaries of Scotland and its Museum, 1780–1980*. Edinburgh: John Donald, pp. 142–211.
- STEVENSON, R.B.K., 1981b. Christian sculpture in Norse Shetland. *Fróðskaparrit*, 28–29, pp. 283–292.
- STEVIK, R., 2011. The forms of two crosses on Pictish cross-slabs: Rossie Priory, Perthshire and Glamis No.2. In: S.T. DRISCOLL, J. GEDDES and M.A. HALL, eds, *Pictish Progress. New Studies on Northern Britain in the Early Middle Ages*. Leiden: Brill, pp. 201–220.
- STUART, J., 1856. *Sculptured Stones of Scotland*. Aberdeen: Spalding Club.
- SUAT, 1991. *Kinnoull: A History of the Parish Cemetery*. Perth: SUAT.
- SUAT, 1999. *National Assessment of Gravestones and Graveyards. Unpublished report for TCRE, Historic Scotland*. Perth: SUAT.
- SUTHERLAND, G., 2014-last update, *The Kelsae Stane* (blog), 25/7/2014. Available at <http://gilessutherland.blogspot.co.uk/2014/07/the-kelsae-stane.html> [April/1, 2016].
- SWIFT, C., 2008. Commentary: the Knowth oghams in context. In: F.J. BYRNE, W. JENKINS, G. KENNY and C. SWIFT, eds, *Excavations at Knowth 4: Historical Knowth and its Hinterland*. Dublin: Royal Irish Academy, pp. 120–132.
- TARLOW, S., 1999. *Bereavement and Commemoration. An Archaeology of Mortality*. Oxford: Blackwell Publishers Ltd.
- THICKPENNY, C.R., In prep. *Key-pattern in Insular art: unlocking regional connections and cultural history, AD 600–1000*. PhD edn. University of Glasgow.
- THOMAS, A., 2015. *Art and architecture in Neolithic Orkney: process, temporality and context*. PhD edn. University of Aberdeen.
- THOMAS, C(harles)., 1961. The animal art of the Scottish Iron Age and its origins. *Archaeological Journal*, 118, pp. 14–64.
- THOMAS, C., 1963. The interpretation of the Pictish symbols. *Archaeological Journal*, 120, pp. 31–97.
- THOMAS, C., 1967. An Early Christian cemetery and chapel on Ardwall Isle, Kirkcudbright. *Medieval Archaeology*, 11, pp. 127–88.
- THOMAS, C., 1971. *The Early Christian Archaeology of North Britain*. Oxford: Oxford University Press.
- THOMAS, C., 1973. Sculptured stones and crosses from St Ninian's Isle and Papil. In: A. SMALL, C. THOMAS and D.M. WILSON, eds, *St Ninian's Isle and its Treasure*. Oxford: Oxford University Press, pp. 8–44.
- THOMAS, C., 1992. *Whithorn's Christian Beginnings. First Whithorn Lecture 19th September 1992*. Whithorn: Friends of the Whithorn Trust.
- THOMSON, G., 2001. Research in inscriptional palaeography (RIP). Scottish tombstone lettering 1241–1855: methodology and preliminary analysis. *Proceedings of the Society of Antiquaries of Scotland*, 131, pp. 349–373.
- THOMSON, G., 2002. Script lettering on Scottish tombstones: origins and influences. *Scottish Tradition*, 27, pp. 115–125.
- THOMSON, G., 2006. Tombstone lettering in Scotland and New England—an appreciation of a vernacular culture. *Mortality*, 11(1), pp. 1–30.
- THOMSON, G., 2013a. Contextualisation and typology of disc-headed and trapezoidal gravemarker forms in Scotland. *Scottish Archaeological Journal*, 34–5 (2012–13), pp. 1–24.
- THOMSON, L.J., 2000. *Scottish market crosses: the development of a risk assessment model*. Available at <http://hdl.handle.net/10059/596>. PhD edn. Aberdeen: Robert Gordon University.
- THOMSON, L.J., 2004. The Scottish Mercat Cross. An historic burgh icon. *History Scotland*, 4(6), pp. 25–34.
- THOMSON, L.J. and URQUHART, D., 1999. Scottish

- market crosses: towards the development of a risk assessment model. In: M.S. JONES and R.D. WAKEFIELD, eds, *Aspects of Stone Weathering, Decay and Conservation. Proceedings of the 1997 Stone Weathering and Atmospheric Pollution Network Conference (SWAPNET'97)*. London: Imperial College Press, pp. 138–146.
- THURLEY, S., 2005. Into the future. Our strategy for 2005–2010. Available at <https://content.historicengland.org.uk/images-books/publications/conservation-bulletin-49/cb4926-27.pdf>. *Conservation Bulletin*, 49, pp. 26–27.
- TILDEN, F., 1957. *Interpreting our Heritage: Principles and Practices for Visitor Services in Parks, Museums, and Historic Places*. North Carolina: University of North Carolina Press.
- TILLEY, C., 1994. *A Phenomenology of Landscape Places, Paths and Monuments*. Oxford: Berg.
- TILLEY, C. and BENNETT, W., 2004. *The Materiality of Stone. Explorations in Landscape Phenomenology: 1*. Oxford & New York: Berg.
- TRENCH-JELLICOE, R., 1997. Pictish and related harps. In: D. HENRY, ed, *The Worm, the Germ and the Thorn. Pictish and Related Studies presented to Isabel Henderson*. Balgavies: Pinkfoot Press, pp. 159–172.
- TRENCH-JELLICOE, R., 2005. A richly decorated cross-slab from Kilduncan House, Fife: description and analysis. *Proceedings of the Society of Antiquaries of Scotland*, 135, pp. 505–559.
- VAN HOEK, M., 1997. The distribution of cup-and-ring motifs along the Atlantic seaboard of Europe. *Rock Art Research*, 14(1), pp. 3–17.
- WAINWRIGHT, F.T., ed, 1955 (repr. 1980). *The Problem of the Picts*. Perth: Methven Press.
- WALDERHAUG SAETERSDAL, E.M., 2000. Ethics, politics and practices in rock art conservation. *Public Archaeology*, 1, pp. 163–180.
- WALKER, J.R., 1887. Scottish baptismal fonts. *Proceedings of the Society of Antiquaries of Scotland*, 21 (1886–7), pp. 346–448.
- WALLACE, T., 1911. Military roads and fortifications in the Highlands, with bridges and milestones. *Proceedings of the Society of Antiquaries of Scotland*, 45 (1910–11), pp. 318–333.
- WATTERS, A., 1998. *Guide to Kirkcaldy Graveyards*. Kirkcaldy: Kirkcaldy Civic Society.
- WELANDER, R.D.E., BREEZE, D.J. and CLANCY, T.O., eds, 2003. *The Stone of Destiny*. Edinburgh: Society of Antiquaries of Scotland.
- WELLS, G. and BISHOP, B., 2005. *Researching Your Graveyard*. Available at <http://www.historic-scotland.gov.uk/researching-your-graveyard.pdf>. Edinburgh: Historic Scotland. Research Report.
- WHATLEY, C.A., 2000. *Memorialising Burns: Dundee and Montrose compared*. Available at http://www.gla.ac.uk/media/media_183298_en.pdf. Robert Burns: Inventing Tradition and Securing Memory, 1796–1909 project.
- WHITWORTH, V., 2016 forthcoming. *Bodystones and Guardian Beasts: The Recumbent Grave-Markers of Middle Britain c. 800–1100*. Oxford: Oxford University Press.
- WILL, R.S., FORSYTH, K., CLANCY, T.O. and CHARLES-EDWARDS, G., 2003. An eighth-century inscribed cross-slab in Dull, Perthshire. *Scottish Archaeological Journal*, 25(1), pp. 57–72.
- WILLIAMS-THORPE, O. and THORPE, R.S., 1993. Magnetic susceptibility used in non-destructive provenancing of Roman granite columns. *Archaeometry*, 35(2), pp. 185–195.
- WILLSHER, B., 1985. *Understanding Scottish Graveyards*. 1st edn. Edinburgh: Canongate Press.
- WILLSHER, B., nd. Manuscript MS 1030/1-MS 1030/27, *National Record of the Historic Environment collections, formerly the National Monuments Record of Scotland*. Unpublished field notes edn.
- WILLSHER, B. and HUNTER, D., 1978. *Stones: A Guide to Some Remarkable Eighteenth Century Gravestones*. Edinburgh: Canongate.
- WINTER, J., 1998. *Sites of Memory, Sites of Mourning: The Great War in European Cultural History*. Cambridge: Cambridge University Press.
- WITHERS, C.W.J., 2001. Monuments: modern. In: M. LYNCH, ed, *The Oxford Companion to Scottish History* Oxford: Oxford University Press, pp. 428–428.
- YATES, T., BUTLIN, R. and HOUSTON, J., 1999. *Assessment Methodology Handbook. Carved Stone Decay in Scotland*. Building Research Establishment commissioned by TCRE. Edinburgh: Historic Scotland.
- YEOMAN, P., 2005. Proposals for the re-display of the early medieval sculpture collection at Whithorn: the evolution of an interpretative approach. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 325–333.
- YOUNG, J.R., 2003. *Stonehouse Kirkyard: the Phoenix Project*. Stonehouse: John R Young.
- YOUNG, M.E., MURRAY, M. and CORDINER, P., 1999. *Stone consolidants and chemical treatments in Scotland*. Available at <http://www2.rgu.ac.uk/schools/mcrg/miconsol.htm>. Unpublished report for Historic

Scotland edn.

10. PUBLISHED SOURCES

Key sources are listed as follows: 10.1 Prehistoric; 10.2 Roman; 10.3 Early medieval; 10.4 Later medieval; 10.5 Architectural; 10.6 Graveyards; 10.7 Public monuments; 10.8 Heritage and conservation; 10.9 Digital. For a sense of what is covered by each heading, bearing in mind the chronological overlaps of some of these categories, see Section 2.

These lists are produced from a database maintained on RefWorks, so that they can be easily updated, without any significant change to the outputs.

The NCCSS aims to publish online an annual list of publications on carved stones in Scotland (www.carvedstones.scot/documents) and welcomes suggested additions. We also welcome details of existing literature too. Please send complete references (note format below) to carvedstones@stir.ac.uk.

10.1 Prehistoric

- ABRAMSON, P., 2010. Prehistoric carved rocks on the MOD Training Estate: managing protection. In: T. BARNETT and K. SHARPE, eds, *Carving a Future for British Rock Art. New Directions for Research, Management and Presentation*. Oxford and Oakville: Oxbow Books, pp. 132–138.
- ALLEN, J.R., 1880. Notes on a cist with axe-head sculptures, near Kilmartin, Argyshire. *Journal of the British Archaeological Association*, 36, pp. 146–150.
- ALLEN, J.R., 1882. Notes on some undescribed stones with cup-markings in Scotland. *Proceedings of the Society of Antiquaries of Scotland*, 16 (1881–2), pp. 79–143.
- ANDERSON, J.R., 1883. *Scotland in Pagan Times. The Iron Age*. Edinburgh: D Douglas.
- AOE ARCHAEOLOGY GROUP, 2014. *Ormaig Prehistoric Rock Art*, Argyll: Archaeological Survey. Unpublished report.
- AOE ARCHAEOLOGY GROUP, 2015. *Ballochmyle Prehistoric Rock Art: Archaeological Survey*. Unpublished report.
- ASHMORE, P., 1996. *Neolithic and Bronze Age Scotland*. London: Batsford/Historic Scotland.
- ASHMORE, P.J., 1986. Neolithic carvings in Maes Howe. *Proceedings of the Society of Antiquaries of Scotland*, 116, pp. 57–62.
- BARNETT, T. and DÍAZ-ANDREU, M., 2005. Knowledge capture and transfer in rock art studies: results of a questionnaire on rock art decay in Britain. *Conservation and Management of Archaeological Sites*, 7(1), pp. 35–48.
- BARNETT, T. and SHARPE, K., eds, 2010. *Carving a Future for British Rock Art. New Directions for Research, Management and Presentation*. Oxford and Oakville: Oxbow Books.
- BARROWMAN, C. and MELLER, D., 1994. *Greenland (Auchentorlie)—Sheep Hill (Old Kilpatrick parish). Discovery and Excavation in Scotland*, 1994, pp. 65–65.
- BECKENSALL, S., 1999. *British Prehistoric Rock Art*. Stroud: Tempus.
- BECKENSALL, S., 2007. How the study of rock-art began and developed. In: A. MAZEL, G. NASH and C. WADDINGTON, eds, *Art as Metaphor: The Prehistoric Rock-Art of Britain*. Oxford: Archaeopress, pp. 205–229.
- BERTILSON, U., *Rock art at risk*. Available at <http://www.international.icomos.org/risk/2002/rockart2002.htm>. BERTILSON, U. and MCDERMOTT, L., eds, 2004. *The Future of Rock Art—A World Review*. Stockholm: Rapport från Riksantikvarieämbetet 2004:7.
- BERTILSON, U. and MCDERMOTT, L., eds, 2004. *The Valcamonica Symposiums 2001 and 2002*. Stockholm: Rapport från Riksantikvarieämbetet 2004:6.
- BJELLAND, T. and HELLBERG, B.H., 2005. *Bergkunst. En veiledning i dokumentasjon, skjøtsel, tilrettelegging og overvåking av norsk bergkunst*. Available at http://www.spatial.baltic.net/_files/Handbook_Preservation.pdf. Norsk Faggruppe for Bergkunstkonservering.
- BOUGHEY, K., 2010. The role of the amateur in the study of UK prehistoric cup-and-ring rock art. In: T. BARNETT and K. SHARPE, eds, *Carving a Future for British Rock Art. New Directions for Research, Management and Presentation*. Oxford and Oakville: Oxbow Books, pp. 65–80.
- BRADLEY, R., 1997a. *Rock Art and the Prehistory of Atlantic Europe*. London and New York: Routledge.
- BRADLEY, R., 1997b. *Altering the Earth. The Origins of Monuments in Britain and Continental Europe*. London and New York: Routledge.
- BRADLEY, R., 1998. Incised motifs in the passage graves at Quoyness and Cuween, Orkney. *Antiquity*, 72, pp. 387–390.
- BRADLEY, R., 2000. *The Good Stones: A New Investigation of the Clava Stones*. Edinburgh: Society of Antiquaries of Scotland.
- BRADLEY, R., 2009 (repr 2010). *Image and Audience. Rethinking Prehistoric Art*. Oxford: Oxford University Press.
- BRADLEY, R., PHILLIPS, T., RICHARDS, C. and WEBB, M., 1999. Discovering decorated tombs in Neolithic Orkney. *Current Archaeology*, 161, pp. 184–187.
- BRADLEY, R., PHILLIPS, T., RICHARDS, C. and WEBB, M., 2000. Decorating the houses of the dead: incised and pecked motifs at Orkney chambered tombs.

- Cambridge Archaeological Journal*, 11(1), pp. 45–67.
- BRADLEY, R. and WATSON, A., 2012. Ben Lawers: carved rocks on a loud mountain. In: A. COCHRANE and A.M. JONES, eds, *Visualising the Neolithic: Abstraction, Figuration, Performance, Representation*. Oxford: Oxbow Books, pp. 64–78.
- BRADLEY, R., WATSON, A. and ANDERSON-WHYMARK, H., 2012. Excavations at four prehistoric rock carvings on the Ben Lawers Estate, 2007–2010. *Proceedings of the Society of Antiquaries of Scotland*, 142, pp. 27–61.
- BRITISH ARCHAEOLOGY, 2013. Dramatic rock art discoveries near Inverness [Swordale Hill]. *British Archaeology*, 130, pp. 6.
- BRUCE, J., 1896. Notice of remarkable groups of archaic sculpturings in Dunbartonshire and Stirlingshire. *Proceedings of the Society of Antiquaries of Scotland*, 30 (1895–6), pp. 205–209.
- BRYAN, P.G., 2010. Three dimensional rock art recording: a ‘lower-cost’ photogrammetric approach. In: T. BARNETT and K. SHARPE, eds, *Carving a Future for British Rock Art. New Directions for Research, Management and Presentation*. Oxford and Oakville: Oxbow Books, pp. 2–10.
- BUTTER, R., 1999. *Kilmartin. An Introduction and Guide*. Kilmartin: Kilmartin House Trust.
- CARD, N., 2013. Ness of Brodgar. More than a stone circle. *British Archaeology*, (January February), pp. 14–21.
- CARD, N. and THOMAS, A., 2012. Painting a picture of the Neolithic: decorated stonework from the Ness of Brodgar, Orkney. In: A. COCHRANE and A.M. JONES, eds, *Visualising the Neolithic: Abstraction, Figuration, Performance, Representation*. Oxford: Oxbow Books, pp. 111–124.
- CAR-ICOMOS, *International Newsletter of Rock Art*. Available at <http://www.bradshawfoundation.com/inora/index.html>.
- CATLING, C., 2013. Great crowns of stone. The recumbent stone circles of Scotland. *Current Archaeology*, 277, pp. 28–33.
- CHILDE, G. and TAYLOR, J., 1939. Rock scriptions at Hawthornden, Midlothian. *Proceedings of the Society of Antiquaries of Scotland*, 73 (1938–9), pp. 316–318.
- COCHRANE, A., JONES, A.M. and SOGNNES, K., 2015. Rock art and the rock surface: Neolithic rock art of Britain, Ireland and northernmost Europe. In: J. HARDING and C. FOWLER, eds, *Oxford Handbook of Neolithic Europe*. Oxford: Oxford University Press, pp. 871–893.
- COCQ, C., HEINERUD, J., LARSSON, T. and HYVÖNEN, B.L., 2014. *Rock Art in Sápmi. Images and stories*. Umeå: Västerbottens Museum.
- COLES, D., MILES, D. and WALKLING, T., 2010. A pecked stone from a Neolithic settlement site at Green, Isle of Eday, Orkney. *PAST The Newsletter of the Prehistoric Society*, 65, pp. 15–16.
- CSI: ROMBALDS MOOR, CSI: *Rombalds Moor*. Available at <https://csirm.wordpress.com/home/> [Feb/29, 2016].
- CURRENT ARCHAEOLOGY, 2012. Second sister for the Orkney Venus. *Current Archaeology*, 272, pp. 8.
- CURRENT ARCHAEOLOGY, 2013. Ancient artwork from the Ness of Brodgar. *Current Archaeology*, (283), pp. 7.
- CURRIE, A., 1830. *A Description of the Antiquities and Scenery of the Parish of North Knapdale*. Glasgow: W.R. M’Phun.
- CURTIS, N. and JAFFRAY, A., 1991. Auchalick Wood (Kilfinan parish). *Discovery and Excavation in Scotland*, 1991, pp. 59–59.
- DARVILL, T. and FERNANDES, A.P.B., eds, 2014a. *Open-air Rock-art Conservation and Management. State of the Art and Future Perspectives*. New York and London: Routledge.
- DARVILL, T. and FERNANDES, A.P.B., 2014b. Open-air rock-art preservation and conservation. In: T. DARVILL and A.P.B. FERNANDES, eds, *Open-air Rock-art Conservation and Management. State of the Art and Future Perspectives*. New York and London: Routledge, pp. 1–16.
- EDWARDS, A.J.H., 1935. Rock sculpturings at Traprain Law, East Lothian. *Proceedings of the Society of Antiquaries of Scotland*, 69 (1934–5), pp. 122–137.
- EDWARDS, A.J.H. and LOW, A., 1933. Short cists in Roxburgh and Sutherland, and rock sculpturings in a Cave at Wemyss, Fife. With a report on the human remains contained in the cists. *Proceedings of the Society of Antiquaries of Scotland*, 67 (1932–3), pp. 164–176.
- ENGLISH HERITAGE, 2000. *Rock Art Pilot Project*. Bournemouth: Bournemouth University, Institute of Archaeology and English Heritage.
- EOGAN, G., 1992. Scottish and Irish passage tombs: some comparisons and contrasts. In: N. SHARPLES and A. SHERIDAN, eds, *Vessels for the Ancestors. Essays on the Neolithic of Britain and Ireland*. Edinburgh: Edinburgh University Press, pp. 120–127.
- ERA, *England’s Rock Art*. Available at <http://archaeologydataservice.ac.uk/era/section/access.jsf>.
- FOSTER, S.M., 2010b. Shaping up rock art in Scotland: past progress, future directions. In: T. BARNETT and K. SHARPE, eds, *Carving a Future for British Rock Art. New Directions for Research, Management and Presentation*. Oxford and Oakville: Oxbow Books, pp. 82–93.
- FOSTER, S.M., 2013b. An Animate Landscape: Rock Art and

- the Prehistory of Kilmartin, Argyll, Scotland. *European Journal of Archaeology*, 16(4), pp. 742–747.
- GIESEN, M.J., UNG, A., WARKE, P.A., CHRISTGEN, B., MAZEL, A.D. and GRAHAM, D.W., 2014. Condition assessment and preservation of open-air rock art panels during environmental change. *Journal of Cultural Heritage*, 15(1), pp. 49–56.
- GOLDHAHN, J., FUGLESTVEDT, I. and JONES, A., eds, 2010. *Changing Pictures. Rock Art Traditions and Visions in Northern Europe*. Oxford: Oxbow.
- GOW, I., 2006. *Scotland's Lost Houses*. London: Aurum.
- GRAHAM, R.C., 1902. Sculptured stones of Scotland. In: J. PATON, ed, *Scottish History and Life*. Glasgow: James Maclehose and Sons, pp. 34–46.
- GUSTAFSSON, A. and KARLSSON, H.2., 2014. *Authenticity in Practice. A Comparative Discussion of the Authenticity, Staging and Public Communication at Eight World Heritage Classified Rock Art Sites*. Lindome: Bricoleur Press.
- HENSEY, R. and ROBIN, G., 2011. More than meets the eye: new recordings of megalithic art in north-west Ireland. *Oxford Journal of Archaeology*, 30(2), pp. 109–130.
- HILTS, C., 2014. Orkney's oldest art at the Smerquoy 'hoose'. *Current Archaeology*, 291, pp. 42–43.
- HINGLEY, R., MOORE, H.L., TRISCOTT, J.E. and WILSON, G., 1997. The excavation of two later Iron Age fortified homesteads at Aldclune, Blair Atholl, Perth and Kinross. *Proceedings of the Society of Antiquaries of Scotland*, 127, pp. 407–466.
- HISTORIC ENVIRONMENT SCOTLAND, Explore the Collections. Available at <http://collections.historic-scotland.gov.uk/simpleSearch.jsp>.
- HYGEN, A., 2006. *The Rock Art Project 1996–2005. Final Report from the Directorate for Cultural Heritage*. Available at http://brage.bibsys.no/xmlui/bitstream/handle/11250/175756/1/Bergkunst_sluttrapport_eng.pdf. Oslo: Riksantikvaren.
- HYGEN, A. and BENGTTSSON, L., 2000. *Rock Carvings in the Borderlands. Bohuslän and Østfold*. Gothenburg: Warne Förlag.
- JONES, A., 2001. Enduring images? Image production and memory in earlier Bronze Age Scotland. In: J. BRÜCK, ed, *Bronze Age Landscapes: Tradition and Transformation*. Oxford: Oxbow Books, pp. 217–228.
- JONES, A., 2006. Animated images. Images, agency and landscape in Kilmartin, Argyll, Scotland. *Journal of Material Culture*, 11(1/2), pp. 211–225.
- JONES, A.M., ANDERSON-WHYMARK, H. and WATSON, A., 2012. Animating Kilmartin. *British Archaeology*, 126, pp. 14–21.
- JONES, A.M., FREEDMAN, D., O'CONNOR, B., LAMDIN-WHYMARK, H., TIPPING, R. and WATSON, A., 2011. *An Animate Landscape: Rock Art and the Prehistory of Kilmartin, Argyll, Scotland*. Oxford: Windgather.
- KALLHVOD, K. and MAGNUSSON, J., eds, 2000. *Rock Carvings in the Borderlands*. Gothenburg: Länstyrelsens rapportserie 2000:56.
- KILMARTIN MUSEUM, Kilmartin Museum. Available at <http://www.kilmartin.org/>.
- LAST, J., 2010. Between a rock and a hard place? The role of rock art in prehistoric research. In: T. BARNETT and K. SHARPE, eds, *Carving a Future for British Rock Art. New Directions for Research, Management and Presentation*. Oxford and Oakville: Oxbow Books, pp. 123–131.
- LODOEN, T.K., ed, 2010. *The Rock Art Project—Securing and Protecting Rock art—University of Bergen 1996–2005*. Bergen: University of Bergen, Bergen Museum.
- LOVEDAY, R., ANDERSON-WHYMARK, H., CARD, N. and THOMAS, A., 2012. Chiselling marks at Maeshowe. *PAST The Newsletter of the Prehistoric Society*, 72, pp. 5–7.
- MACGREGOR, G., 2005. Megalithic art on the Ferndale slab. In: P. DUFFY, ed, *The Excavation of a Mound and Three Cist Burials at Ferndale, Rendall, Orkney*. *Scottish Archaeological Internet Reports* 16, pp. 11–12.
- MACKENZIE, J.B., 1895. Notice of the discovery of incised cup- and ring-sculpturings at Braes of Balloch near Taymouth Castle. *Proceedings of the Society of Antiquaries of Scotland*, 29 (1894–5), pp. 94–95.
- MACKIE, E. and DAVIS, A., 1989. New light on Neolithic rock carving. The petroglyphs at Greenland (Auchentorlie), Dunbartonshire. *Glasgow Archaeological Journal*, 15 (1988–9), pp. 125–155.
- MACKINTOSH GOW, J., 1886. Notice of cup-marked stones and curing well on the Estate of Garth, Fortingall, Perthshire. With drawings. *Proceedings of the Society of Antiquaries of Scotland*, 8(1885–6), pp. 41–46.
- MACMILLAN, H., 1884. Notice of cup-marked stones near Aberfeldy. *Proceedings of the Society of Antiquaries of Scotland*, 6 (1883–4), pp. 109–128.
- MALCOLM, J., 1870. [Exhibition of cast and rubbings and notice of discovery of cist at Ri Cruin]. *Proceedings of the Society of Antiquaries of London*, 4(2nd series), pp. 511–513.
- MAPLETON, R.J., 1870a. Notice of remarkable cists in a gravel bank near Kilmartin, and of incised sculpturing of axe-heads and other markings on the stones of the cists. *Proceedings of the Society of Antiquaries of Scotland*, 8 (1868–70), pp. 378–381.
- MAPLETON, R.J., 1870b. Note on a cist with engraved stones

- on the Poltalloch Estate, County of Argyll, N.B. *Journal of the Ethnological Society of London*, 2 (1869–70)(3), pp. 340–342.
- MAZEL, A., NASH, G. and WADDINGTON, C., eds, 2007. *Art as Metaphor: The Prehistoric Rock-Art of Britain*. Oxford: Archaeopress.
- MOORE, H. and WILSON, G., 2013. Sands of Time. Domestic rituals at the Links of Noltland. *Current Archaeology*, 275, pp. 12–19.
- MORRIS, R., 1989. The prehistoric rock art of Great Britain: a survey of all sites bearing motifs more complex than simple cup- marks. *Proceedings of the Prehistoric Society*, 55, pp. 45–88.
- NASH, G. and CHIPPINDALE, C., eds, 2002. *European Landscapes of Rock-Art*. London and New York: Routledge.
- NASH, G. and STANFORD, A., 2010. Encryption and display: recording new images on the Calderstones in Liverpool. In: T. BARNETT and K. SHARPE, eds, *Carving a Future for British Rock Art. New Directions for Research, Management and Presentation*. Oxford and Oakville: Oxbow Books, pp. 11–24.
- NEEDHAM, S. and COWIE, T., 2012. The halberd pillar at Ri Cruin cairn, Kilmartin, Argyll. In: A. COCHRANE and A.M. JONES, eds, *Visualising the Neolithic: Abstraction, Figuration, Performance, Representation*. Oxford: Oxbow Books, pp. 89–110.
- NOSAS, Current Projects. Available at <http://www.nosas.co.uk/currentprojects.asp> [April/03, 2016].
- PEACOCK, D.P.S., 1998. *The Archaeology of Stone. A Report for English Heritage*. London: English Heritage.
- PHILLIPS, T. and BRADLEY, R., 2000. Pick-dressing in the Neolithic monuments of Orkney. *Scottish Archaeological Journal*, 22(2), pp. 103–110.
- PIGGOTT, S., 1972. Excavation of the Dalladies long barrow, Fettercairn, Kincardineshire. *Proceedings of the Society of Antiquaries of Scotland*, 104 (1971–2), pp. 23–47.
- PIGGOTT, S., 1973. The Dalladies long barrow: NE Scotland. *Antiquity*, 47, pp. 32–36.
- PIGGOTT, S., 1983. The national museum of antiquities and archaeological research. In: A. CONNOR and D.V. CLARKE, eds, *From the Stone Age to the 'Forty-Five. Studies presented to R.B.K. Stevenson, former Keeper National Museum of Antiquities of Scotland*. Edinburgh: John Donald Publishers Ltd, pp. 4–8.
- PILOTI, *Digital Rock Art from Ancient Europe*. Available at <http://www.piloti.org/index.php/en/> [Apr/20, 2016].
- RAMIREZ, P.B., DE BALBÍN BEHRMANN, R., LAPORTE, L., GOUÉZIN, P., COUSSEAU, F., BERMEJO, R.B., HERNANZ GISMERO, A., IRIARTE CELA, M. and QUESNEL, L., 2015. Natural and artificial colours: the megalithic monuments of Brittany. *Antiquity*, 89(343), pp. 55–71.
- RCAHMS, 1988. *Argyll: An Inventory of the Monuments, Volume 6. Mid Argyll & Cowal. Prehistoric and Early Historic Monuments*. Glasgow: HMSO.
- RCAHMS, 1999. *Kilmartin Prehistoric & Early Historic Monuments. An Inventory of the Monuments extracted from Argyll, volume 6*. Edinburgh: HMSO.
- RICHARDS, C., 1991. Skara Brae: revisiting a Neolithic village in Orkney. In: W.S. HANSON and E.A. SLATER, eds, *Scottish Archaeology: New Perceptions*. Aberdeen: Aberdeen University Press, pp. 24–43.
- ROBIN, G., 2010. Spatial structures and symbolic statements in Irish and British passage tombs: the organization of architectural elements, parietal carved signs and funerary deposits. *Cambridge Archaeological Journal*, 20, pp. 373–418.
- SCANDINAVIAN SOCIETY FOR ROCK ART, Underslös Museum. Tanum Rock Art Research Centre. Available at <http://www.rockartscandinavia.com/frontpage.php>.
- SCOTT, J.G., 1989. The stone circles at Temple Wood, Kilmartin, Argyll. *Glasgow Archaeological Journal*, 15, pp. 53–124.
- SCOTTISH EXECUTIVE, 2005. *Carved Stones. Scottish Executive Policy and Guidance*. Edinburgh: Historic Scotland.
- SCOTT-MONCRIEFF, G., 1938. *The Stones of Scotland*. London: B T Batsford Ltd.
- SHARPLES, N., 1984. Excavations at Pierowall Quarry, Westray, Orkney. *Proceedings of the Society of Antiquaries of Scotland*, 114, pp. 75–115.
- SHEE TWOHIG, E., 1981. *The Megalithic Art of Western Europe*. Oxford: Clarendon Press.
- SHEE TWOHIG, E., 1999. “Megalithic art” in a settlement context: Skara Brae and related sites in the Orkney Islands. *Brigantium*, 10, pp. 377–389.
- SHEPHERD, A., 2000. Skara Brae: expressing identity in a Neolithic community. In: A. RITCHIE, ed, *Neolithic Orkney in its European Context*. Cambridge: McDonald Institute Monographs, pp. 139–158.
- SIMPSON, D.D.A. and THAWLEY, J.E., 1972. Single grave art in Britain. *Scottish Archaeological Forum*, 4, pp. 81–104.
- SIMPSON, J.Y., 1866. On ancient sculpturings of cups and concentric rings. *Proceedings of the Society of Antiquaries of Scotland*, 6 (1864–6), pp. 1–134.
- SPROAT, D., 2005. *Skara Brae, Orkney: Survey Completion and Inscribed Stone Record*. Unpublished report produced for Historic Scotland under HS Contact no FG/31076/819.4526.

- STEVENSON, J.B., 1993. Cup- and ring-markings at Ballochmyle, Ayrshire. *Glasgow Archaeological Journal*, 18, pp. 33–40.
- STEVENSON, R.B.K., 1981a. The museum, its beginnings and its development. Part II: the National Museum to 1954. In: A.S. BELL, ed, *The Scottish Antiquarian Tradition. Essays to Mark the Bicentenary of the Society of Antiquaries of Scotland and its Museum, 1780–1980*. Edinburgh: John Donald, pp. 142–211.
- STUART, J., 1859. Note of incised marks on one of a circle of standing stones in the Island of Lewis. *Proceedings of the Society of Antiquaries of Scotland*, 3 (1857–9), pp. 212–214.
- STUART, J., 1864. Notice of excavations in the chambered mound of Maeshowe, in Orkney, and of the runic inscriptions on the walls of its central chamber. *Proceedings of the Society of Antiquaries of Scotland*, 5 (1862–4), pp. 247–279.
- THE BRITISH SOCIETY OF DOWSERS, 2016-last update, *Adventures in Dowsing. AiD047: Revealing Cochno*. Available at <http://adventuresindowsing.com/aid047-revealing-cochno/> [Jan/29, 2016].
- THOMAS, A., 2014a. Creating contexts: between the archaeological site and art gallery. In: A.I. RUSSELL and A. COCHRANE, eds, *Art and Archaeology*. New York: Springer-Kluwer, pp. 141–155.
- THOMAS, A., 2014b. Art & Architecture at the Ness of Brodgar. *British Archaeology*, 138, pp. 16–21.
- THOMAS, A., 2015. *Art and architecture in Neolithic Orkney: process, temporality and context*. PhD edn. University of Aberdeen.
- TILLEY, C., 1994. *A Phenomenology of Landscape Places, Paths and Monuments*. Oxford: Berg.
- TILLEY, C. and BENNETT, W., 2004. *The Materiality of Stone. Explorations in Landscape Phenomenology: 1*. Oxford & New York: Berg.
- UNIVERSITY OF NEWCASTLE UPON TYNE, *Northumberland Rock Art*. Web access to the Beckensall Archive. Available at <http://rockart.ncl.ac.uk/>.
- UNIVERSITY OF NEWCASTLE UPON TYNE, 2014-last update, *Heritage and Science: Working together in the CARE of rock art*. Available at <https://research.ncl.ac.uk/heritagescience/> [Apr/25, 2016].
- VAN HOEK, M., 1997. The distribution of cup-and-ring motifs along the Atlantic seaboard of Europe. *Rock Art Research*, 14(1), pp. 3–17.
- WADDINGTON, C., 1998. Cup and ring marks in context. *Cambridge Archaeological Journal*, 8(1), pp. 29–54.
- WALDERHAUG SAETERSDAL, E.M., 2000. Ethics, politics and practices in rock art conservation. *Public Archaeology*, 1, pp. 163–180.
- WEBB, S., 2012. *In the Footsteps of Kings. A New Guide to Walks in and around Kilmartin Glen*. Kilmartin: Kilmartin House Trust.
- WHITE, T.P., 1872. Observations on the value of rubbings in the preparation of monumental drawings (illustrated by drawings, rubbings of slabs, rock-sculpture, &c.). *Proceedings of the Society of Antiquaries of Scotland*, 9 (1870–72), pp. 60–71.
- YOUNG, A., 1938. Cup- and ring-markings on Craig Ruenshin, with some comparative notes. *Proceedings of the Society of Antiquaries of Scotland*, 72 (1937–8), pp. 143–149.
- ZILHÃO, J., 1998. The rock art of the Côa valley, Portugal: significance, conservation and management. *Conservation and Management of Archaeological Sites*, 2(4), pp. 193–206.
- ZÜCHNER, C., 2004. The CAR-ICOMOS charter for the protection and management of rock art and rock art sites. Final draft version. In: U. BERTILSON and L. MCDERMOTT, eds, *The Valcamonica Symposiums 2001 and 2002*. Stockholm: Rapport från Riksantikvarieämbetet 2004:6, pp. 149–151.

10.2 Roman

- BO'NESS COMMUNITY COUNCIL, *Bridgeness Slab*. Available at <http://www.bridgenessslab.org.uk/index.php/roman-history-scotland/11-the-mark-of-rome-bridgeness-slab-film> [03/15, 2015].
- BREEZE, D.J., 2006. *The Antonine Wall*. Edinburgh: John Donald.
- COLLINGWOOD, R.G. and WRIGHT, R.B., 1965. *The Roman Inscriptions of Britain*. Oxford: Clarendon Press.
- DODDS, W., 1972. Celtic stone heads from Dumfriesshire. *Transactions of the Dumfriesshire and Galloway Natural History and Antiquarian Society*, 49 (3rd ser), pp. 36–36.
- HISTORIC ENVIRONMENT SCOTLAND, Explore the Collections. Available at <http://collections.historic-scotland.gov.uk/simpleSearch.jsp2015>].
- HISTORY SCOTLAND, 2012. *Archaeology News—The Roman altars from Lewisvale Park*, Musselburgh. *History Scotland*, 12(5), pp. 14.
- HUNTER, F., 2012. Beyond Hadrian's Wall. War and diplomacy on the edge of the Roman world. *Current Archaeology*, 265, pp. 18–25.
- KEPPIE, L.J.F., 1976. The distance slabs from the Antonine Wall: some problems. *Scottish Archaeological Forum*, 7, pp. 57–65.

- KEPPIE, L.J.F., 1979. *Roman Distance Slabs from the Antonine Wall*. Glasgow: Hunterian Museums Publications.
- KEPPIE, L.J.F., 1983. Roman inscriptions from Scotland: some additions and corrections to RIB I. *Proceedings of the Society of Antiquaries of Scotland*, 113, pp. 391–404.
- KEPPIE, L.J.F., 1998a. *Scotland's Roman Remains: An Introduction and Handbook*. Edinburgh: John Donald.
- KEPPIE, L.J.F., 1998b. *Roman Inscribed and Sculptured Stones in the Hunterian Museum, University of Glasgow*. Cambridge: Society for the Promotion of Roman Studies.
- KEPPIE, L., 2006. Roman inscribed stones. In: C. LOWE, ed, *Excavations at Hoddam, Dumfriesshire*. Edinburgh: Society of Antiquaries of Scotland, pp. 115–123.
- KEPPIE, L., 2012. *The Antiquarian Rediscovery of the Antonine Wall*. Edinburgh: Society of Antiquaries of Scotland.
- KEPPIE, L.J.F., 2014a. The Hunterian collection and its Museum. *Journal of the History of Collections*, 26(3), pp. 355–362.
- KEPPIE, L., 2014b. The Morton Manuscript: 'ancient inscriptions on stones found in Scotland'. *Proceedings of the Society of Antiquaries of Scotland*, 144, pp. 323–348.
- KEPPIE, L.J.F. and ARNOLD, B.J., 1984. *Corpus Signorum Imperii Romani (Corpus of Sculpture of the Roman World) Great Britain Volume 1, Fascicle 4*. Oxford: British Academy.
- SCOTTISH EXECUTIVE, 2005. *Carved Stones. Scottish Executive Policy and Guidance*. Edinburgh: Historic Scotland.
- Antiquaries of Scotland.
- ALLEN, J.R., 1878. Note on interlaced crosses. *Journal of the British Archaeological Association*, 34, pp. 352–359.
- ALLEN, J.R., 1883. On the discovery of a sculptured stone at St Madoes, with an analysis of interlaced ornament. *Proceedings of the Society of Antiquaries of Scotland*, 17 (1882–3), pp. 211–271.
- ALLEN, J.R., 1884. Notes on Early Christian symbolism. *Proceedings of the Society of Antiquaries of Scotland*, 18 (1883–4), pp. 380–464.
- ALLEN, J.R., 1885. Celtic metalwork. *Magazine of Art*, 8, pp. 456–460.
- ALLEN, J.R., 1891. Report on the sculptured stones older than A.D. 1100, with symbols and celtic ornament, in the district of Scotland, north of the River Dee; obtained under the Victoria Jubilee Gift of His Excellency Dr. R. H. Gunning, F.S.A. Scot. *Proceedings of the Society of Antiquaries of Scotland*, 25 (1890–91), pp. 422–431.
- ALLEN, J.R., 1892. Report on the sculptured stones older than A.D. 1100, with symbols and celtic ornament, in the district of Scotland south of the River Dee; obtained under the Victoria Jubilee Gift of His Excellency Dr. R. H. Gunning, F.S.A. Scot. *Proceedings of the Society of Antiquaries of Scotland*, 26 (1891–2), pp. 251–259.
- ALLEN, J.R., 1894. Report on the photographs of the sculptured stones earlier than A.D. 1100, in the district of Scotland north of the River Dee, obtained under the Jubilee Gift of His Excellency Dr R. H. Gunning, F.S.A. Scot. *Proceedings of the Society of Antiquaries of Scotland*, 28 (1893–4), pp. 150–177.
- ALLEN, J.R., 1897. Report on the photography of the sculptured stones earlier than A.D. 1100, in the district of the Scotland south of the River Dee; obtained under the Jubilee Gift of his Excellency Dr R. H. Gunning, LL.D., F.S.A. Scot. *Proceedings of the Society of Antiquaries of Scotland*, 31 (1896–7), pp. 147–152.
- ALLEN, J.R., 1901. The Early Christian monuments of Iona; with some suggestions for their better preservation. *Proceedings of the Society of Antiquaries of Scotland*, 35 (1900–01), pp. 79–93.
- ALLEN, J.R., 1904. *Celtic Art in Pagan and Christian Times*. London: Methuen & Co.
- ALLEN, J.R. and ANDERSON, J., 1903 (rep. 1993). *The Early Christian Monuments of Scotland*. Edinburgh (repr. Balgavies): Society of Antiquaries of Scotland (repr. The Pinkfoot Press).
- ANCIENT MONUMENTS BOARD FOR WALES, 2001. *Protecting Early Medieval Inscribed Stones and Stone Sculpture*. Cardiff: Cadw.
- ANDERSON, A., 1878. Notice of the discovery of a sculptured stone at Logierait, Perthshire. *Proceedings of the*

10.3 Early medieval

See Nicoll 1995 for further detail of publications about Pictish sculpture pre-dating 1995.

ADCOCK, G., 1974. *A study of the types of interlace on Northumbrian sculpture*. MPhil edn. University of Durham.

ALCOCK, E., 1988. Pictish symbol stones Class I: where and how? *Glasgow Archaeological Journal*, 15, pp. 1–21.

ALCOCK, L., 1993a. Image and icon in Pictish sculpture. In: R.M. SPEARMAN and J. HIGGITT, eds, *The Age of Migrating Ideas. Early Medieval Art in Northern Britain and Ireland*. Stroud: National Museums of Scotland/ Alan Sutton Publishing, pp. 230–236.

ALCOCK, L., 1993b. *The Neighbours of the Picts: Angles, Britons and Scots at War and at Home*. Rosemarkie: Groam House Museum.

ALCOCK, L., 2003. *Kings and Warriors, Craftsmen and Priests in Northern Britain AD 550–850*. Edinburgh: Society of

- Society of Antiquaries of Scotland*, 12 (1876–8), pp. 561–564.
- ANDERSON, J., 1881a. *Scotland in Early Christian Times (Second Series). The Rhind Lectures in Archaeology for 1880*. Edinburgh: David Douglas.
- ANDERSON, J., 1881b. *Scotland in Early Christian Times. The Rhind Lectures in Archaeology—1879*. Edinburgh: David Douglas.
- ANDERSON, J., 1888. Our national monuments. *The Archaeological Review*, 1, pp. 186–191.
- ANDERSON, J., 1889. Notices of some undescribed sculptured stones and fragments in different parts of Scotland. *Proceedings of the Society of Antiquaries of Scotland*, 23 (1888–9), pp. 344–355.
- ANDERSON, J., 1897. Notices of some recently-discovered inscribed and sculptured stones. *Proceedings of the Society of Antiquaries of Scotland*, 31 (1896–7), pp. 293–308.
- ANON, 2014a. Britain in Archaeology [Discovery of Viking runestone, Orkney]. *British Archaeology*, 135, pp. 9.
- ANON, 2014b. Britain in Archaeology [Fiona Hyslop visits Weemys Caves]. *British Archaeology*, 135, pp. 8.
- ANON, 2014c. Downpatrick High Cross Project Up and Running. *Down County Museum News*, 34, pp. 4–5.
- ANON, 2014d. Monastic community archaeology on the Isle of Mull. *Current Archaeology*, 289, pp. 11.
- ANON, 2014e. New research on ‘St Patrick’s Cross’ fragments in Down Cathedral. *Down County Museum News*, 34(6), pp. 7.
- ANON, 2014f. News: Scottish stones highlight ancient art [Dandaleith Farm near Craigellachie Pictish stone discovery]. *British Archaeology*, 139, pp. 8.
- ANON, 2016. Aberlady Angles community archaeology project launched. *History Scotland*, 16(2), pp. 13–13.
- AOE ARCHAEOLOGY GROUP, 2010. Cross base, Queen Mary’s House, Jedburgh. Laser Scanning Report.
- ATKINSON, N.K., 2005. Curators of the last resort: the role of a local museum service in the preservation and interpretation of early medieval sculptured stones. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland’s Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 335–342.
- BAILEY, R.N., 2003. ‘Innocent from the great offence’. In: C.E. KARKOV and F. ORTON, eds, *Theorizing Anglo-Saxon Stone Sculpture. Medieval European Studies IV*. Morgantown: West Virginia University Press, pp. 93–103.
- BAKER, M., 2007-last update, The history of the Cast Courts [Homepage of V&A], [Online]. Available at <http://www.vam.ac.uk/content/articles/t/the-cast-courts/> [Jul/06, 2013].
- BALDWIN BROWN, G., 1921. *The Arts in Early England. V The Ruthwell and Bewcastle Crosses, The Gospels of Lindisfarne, and other Early Christian Monuments of Northumbria*. London: John Murray.
- BARNES, J., In prep. *Of warriors and beasts: Viking Age interactions between the kingdoms of Strathclyde and Northumbria*. PhD edn. University of Glasgow.
- BARNES, M., 1994. *The Runic Inscriptions of Maeshowe, Orkney*. Uppsala: Department of Scandinavian Languages, Uppsala University.
- BARNES, M.P. and PAGE, R.I., 2006. *The Scandinavian Runic Inscriptions of Britain*. Uppsala: Department of Scandinavian Languages, Uppsala University.
- BLACKIE, T. and MACAULAY, C., 1998. *The Sculptured Stones of Caithness: A Survey*. Balgavies: Pinkfoot Press.
- BLACKWELL, A., 2016. Gleaming eyes and the elaboration of Anglo-Saxon sculpture. In: F. HUNTER and A. SHERIDAN, eds, *Ancient Lives. Object, People and Place in Early Scotland. Essays for David V Clarke on his 70th Birthday*. Leiden: Sidestone Press, pp. 317–330.
- BLUEBIRD MEDIA, *Saving the Downpatrick High Cross*. Available at <http://www.youtube.com/watch?v=K3GSP0Va-PU&feature=youtu.be> [11/17, 2014].
- BOURKE, C., 2007. The iconography of the devil: St Vigean’s, Eassie and the Book of Kells. *Innes Review*, 58(1), pp. 95–100.
- BRASH, R.B., 1874. Remarks on the ogham inscription of the Newton pillar stone. *Proceedings of the Society of Antiquaries of Scotland*, 10 (1872–4), pp. 134–141.
- BRITISH ARCHAEOLOGY, 2012. Britain in archaeology [Trusty’s hillfort]. *British Archaeology*, (September October), pp. 9.
- BROPHY, K., CAMPBELL, E., DALGLISH, C., DRISCOLL, S.T., GIVEN, M., NOBLE, G. and POLLER, T., 2010. *Strathearn Environs and Royal Forteviot. Project Report 2006–2009*. Perth: Perth and Kinross Heritage Trust.
- BROWN, D., 1995. The Picts in documentary history. In: E.H. NICOLL, ed, *A Pictish Panorama. The Story of the Picts and a Pictish Bibliography*. Balgavies, Angus: The Pinkfoot Press, pp. 2–5.
- BROWN, G.F., 1883. Sculpture in Pictland. *Magazine of Art*, New Series 6, pp. 15–22.
- BROWN, G.F., 1885. Early sculptured stones in England—I. *Magazine of Art*, 8, pp. 78–82.
- BROWN, G.F., 1885. Early sculptured stones in England—II.

- Magazine of Art*, 8, pp. 154–159.
- BUSSET, A., In prep. *Early medieval carved stones from Ireland, Scotland and Scandinavia: A comparative study through place, movement, memory and identity*. PhD edn. University of Glasgow.
- BYATT, M., 2008. *Carved Stones from Kinneddar (Drainie) and Burghead. A Catalogue of the Pictish Stones in the Collections of the Elgin Museum*. Elgin: The Moray Society.
- CAMPBELL, E., 2010. The archaeology of writing at the time of Adomnán. In: J. WOODING, ed, *Adomnán of Iona: Theologian, Lawmaker, Peacemaker*. Dublin: Four Courts press, pp. 139–144.
- CAMPBELL, E., forthcoming. Peripheral Vision: Scotland in Early Medieval Europe. In: A. BLACKWELL, ed, *Scotland in Early Medieval Europe*.
- CARR, R., 1866. Observations on some of the runic Inscriptions at Maeshowe, Orkney. *Proceedings of the Society of Antiquaries of Scotland*, 6 (1864–6), pp. 70–83.
- CARRAGAIN, E., 2003. Between Annunciation and Visitations: spiritual birth and the cycles of the sun on the Ruthwell Cross. In: C.E. KARKOV and F. ORTON, eds, *Theorizing Anglo-Saxon Stone Sculpture. Medieval European Studies IV*. Morgantown: West Virginia University Press, pp. 131–187.
- CARTY, A., 2005. Three-dimensional recording of Pictish sculpture. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 367–374.
- CARVER, M.O.H., 2005. Sculpture in action: contexts for stone carving on the Tarbat peninsula, Easter Ross. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 13–53.
- CASSIDY, B., ed, 1992. The Ruthwell Cross. Papers from the Colloquium Sponsored by the Index of Christian Art. Princeton University, 8 December 1989. *Index of Christian Art, Occasional Papers 1*. Princeton: Index of Christian Art, Department of Art and Archaeology, University of Princeton.
- CHARLES-EDWARDS, G., 2004. A reconsideration of the origins on the early Insular monumental lettering of a mixed alphabet type: the case of the 'Lapis Echodi' inscription on Iona. *Proceedings of the Society of Antiquaries of Scotland*, 134, pp. 173–181.
- CLANCY, T.O., 1993. The Drosten Stone: a new reading. *Proceedings of the Society of Antiquaries of Scotland*, 123, pp. 345–353.
- CLARKE, D.V., 2007. Reading the multiple lives of Pictish symbol stones. *Medieval Archaeology*, 51, pp. 19–39.
- CLARKE, D.V., BLACKWELL, A. and GOLDBERG, M., 2012. *Early Medieval Scotland. Individuals, Communities and Ideas*. Edinburgh: National Museums Scotland.
- CLARKE, D.V. and HEALD, A., 2008. A new date for Pictish symbols. *Medieval Archaeology*, 52, pp. 291–296.
- CRAIG, D.J., 1991. The sculptured stones from Hoddom, 1991. Appendix C of C.E. Lowe, New light on the Anglian "Minster" at Hoddam. *Transactions of the Dumfriesshire and Galloway Natural History and Antiquarian Society*, 46, pp. 11–35.
- CRAIG, D.J., 1993. *The distribution of pre-Norman sculpture in south-west Scotland: provenance, ornament, and regional groups*. PhD edn. University of Durham.
- CRAIG, D., 1994. The early medieval sculpture of the Glasgow area. In: A. RITCHIE, ed, *Govan and its Early Medieval Sculpture*. Stroud: Alan Sutton Publishing Ltd, pp. 73–91.
- CRAIG, D., 2006. The later medieval carved stone assemblage. In: C. LOWE, ed, *Excavations at Hoddam, Dumfriesshire*. Edinburgh: Society of Antiquaries of Scotland, pp. 123–144.
- CRAMP, R., 1983. The Anglian sculptures from Jedburgh. In: A. CONNOR and D.V. CLARKE, eds, *From the Stone Age to the 'Forty-Five. Studies presented to R.B.K. Stevenson, former Keeper National Museum of Antiquities of Scotland*. Edinburgh: John Donald Publishers Ltd, pp. 269–284.
- CRAMP, R.J., 1984a. *Corpus of Anglo-Saxon Stone Sculpture. Vol 1. County Durham and Northumberland*. Oxford: Oxford University Press.
- CRAMP, R., 1984b. *Grammar of Anglo-Saxon Ornament: A General Introduction to the Corpus of Anglo-Saxon Stone Sculpture*. Oxford: The British Academy.
- CRAMP, R., 2014. The Hirsell Excavations. *Society for Medieval Archaeology Monograph 36*. Leeds: Society for Medieval Archaeology.
- CRAMP, R. and DOUGLAS-HOME, C., 1978. New discoveries at The Hirsell, Coldstream, Berwickshire. *Proceedings of the Society of Antiquaries of Scotland*, 109 (1977–8), pp. 223–232.
- CRAWFORD, B.E., 2005. *The Govan Hogbacks and the Multi-Cultural Society of Tenth-Century Scotland*. Glasgow: Friends of Govan Old.
- CRUIKSHANK, G., 2008. Sir Daniel Wilson and the Pictifying of the symbol stones. *Pictish Arts Society Newsletter*, 46, pp. 11–12.
- CURLE, C.L., 1940. The chronology of the early Christian monuments of Scotland. *Proceedings of the Society of Antiquaries of Scotland*, 74 (1939–40), pp. 60–116.
- CURLE, C.L., 1962. Some little known Early Christian

- monuments in the west of Scotland. *Proceedings of the Society of Antiquaries of Scotland*, 95 (1961–2), pp. 223–226.
- CURRENT ARCHAEOLOGY, 2012a. Rheghed revisited. *Current Archaeology*, 270, pp. 9.
- CURRENT ARCHAEOLOGY, 2012b. Village of the Pictish symbol stones. *Current Archaeology*, 263, pp. 8–9.
- CURRENT ARCHAEOLOGY, 2013. The Coronation Chair. Anatomy of a medieval throne. *Current Archaeology*, 283, pp. 34–40.
- CURSITER, J.W., 1898. Note on a stone bearing an incised cross, from the site of St Colm’s Chapel, Walls, Orkney. *Proceedings of the Society of Antiquaries of Scotland*, 32 (1897–8), pp. 50–52.
- CURSITER, J.W., 1908. Notices (1) of a bronze dagger, with its handle of horn, recently found in the island of Rousay; and (2) of an Inscription in tree-runes, recently discovered on a stone in the stone circle of Stennis, Orkney. *Proceedings of the Society of Antiquaries of Scotland*, 42 (1907–08), pp. 74–78.
- CURTIS, N., 2007. “Like stray words of letters”. The development and workings of the Treasure Trove system. In: B. BALLIN SMITH, S. TAYLOR and G. WILLIAMS, eds, *West over Sea. Studies in Scandinavian Sea-Borne Expansion and Settlement before 1300*. Leiden: Brill, pp. 341–361.
- DALGLISH, C. and DRISCOLL, S.T., 2009. *Historic Govan. Archaeology and Development*. York: Council for British Archaeology.
- DIACK, F.C., 1944. *The Inscriptions of Pictland*. Aberdeen: Spalding Club.
- DISCOVERY PROGRAMME 3D ICONS, 2015-last update, *Turntable of Early Christian Carved Figure 1, White Island*. Available at <https://www.youtube.com/watch?v=MvWlwmk51hU> [03/15, 2015].
- DOLAN, B., 2013. “Mysterious waifs of time”: some thoughts on the functions of Irish bullaun stones. *Journal of the Royal Society of Antiquaries of Ireland*, 142–3 (2012–13), pp. 42–58.
- DOWDEN, J., 1898. Observations and conjectures on the Kirkmadrine epigraphs. *Proceedings of the Society of Antiquaries of Scotland*, 32 (1897–8), pp. 247–274.
- DRANSART, P., 2001. Two shrine fragments from Kinneddar, Moray. In: M. REDKNAP, N. EDWARDS, S. YOUNGS, A. LANE and J. KNIGHT, eds, *Pattern and Purpose in Insular Art. Proceedings of the Fourth International Conference on Insular Art held at the National Museum & Gallery, Cardiff 3–6 September 1998*. Oxford: Oxbow Books, pp. 235–240.
- DRANSART, P., 2003. Saints, stones and shrines: the cults of Sts Molaug and Gerardine in Pictland. In: J. CARTWRIGHT, ed, *Celtic Hagiography and Saint’s Cults*. Cardiff: Cardiff: University of Wales Press, pp. 285–318.
- DRISCOLL, S.T., 2000. Christian monumental sculpture and ethnic expression in early Scotland. In: W. FRAZER and A. TYRELL, eds, *Social Identity in Early Medieval Britain and Ireland. Studies in the Early History of Britain Series*. Leicester: Leicester University Press, pp. 233–252.
- DRISCOLL, S.T., 1988. Power and authority in Early Historic Scotland: Pictish symbol stones and other documents. In: J. GLEDHILL, B. BENDER and M.T. LARSEN, eds, *State and Society. The Emergence and Development of Social Hierarchy and Political Centralization. One World Archaeology Series*. London: Thomson Publishing Services, pp. 215–236.
- DRISCOLL, S.T., 2003. Govan: an early medieval royal centre on the Clyde. In: R.D.E. WELANDER, D.J. BREEZE and T.O. CLANCY, eds, *The Stone of Destiny: Artefact and Icon*. Edinburgh: Society of Antiquaries of Scotland, pp. 77–83.
- DRISCOLL, S.T., 2004. *Govan from Cradle to Grave*. Glasgow: Friends of Govan Old.
- DRISCOLL, S.T., 2010. SERFing in the Scottish heartlands: artefacts and research strategy. *Scottish Archaeological Journal*, 32(1), pp. 57–72.
- DRISCOLL, S.T., 2014. The Govan Stones revealed. *History Scotland*, (14), pp. 36–37.
- DRISCOLL, S.T., 2016. Reading Govan Old: interpretative challenges and aspirations. In: F. HUNTER and A. SHERIDAN, eds, *Ancient Lives. Object, People and Place in Early Scotland. Essays for David V Clarke on his 70th Birthday*. Leiden: Sidestone Press, pp. 73–91.
- DRISCOLL, S.T., O’GRADY, O. and FORSYTH, K., 2005. The Govan School revisited: searching for meaning in the early medieval sculpture of Strathclyde. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland’s Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 135–158.
- EDWARDS, N., 1987. Abstract ornament on early medieval Irish crosses: a preliminary catalogue. In: M. RYAN, ed, *Ireland and Insular Art A.D. 500–1200*. Dublin: Royal Irish Academy, pp. 111–117.
- EDWARDS, N., 2007. *A Corpus of Early Inscribed Stones and Stone Sculpture in Wales, Vol. 2 South-West Wales*. Cardiff: University Wales Press.
- EDWARDS, N., 2013. *A Corpus of Early Inscribed Stones and Stone Sculpture in Wales Vol. 3 North Wales*. Cardiff: University Wales Press.
- EDWARDS, N., 2015. *The Early Medieval Sculpture of Wales: Text, Pattern and Image. Kathleen Hughes Memorial Lectures 13*. University of Cambridge: Hughes Hall &

Department of Anglo-Saxon, Norse and Celtic.

- EMSSS WORKING GROUP, 2005d. *Early Medieval Stone Sculptures of Scotland Working Group. Final report to NCCSS. Compiled by M.A. Hall.* Available at http://www.carvedstones.scot/uploads/4/4/0/3/44032535/emss_final_report_24_nov_2005.pdf. Unpublished report edn.
- EWART, G., GALLAGHER, D. and RITCHIE, A., 2007. The Dupplin Cross: recent excavations. *Proceedings of the Society of Antiquaries of Scotland*, 137, pp. 319–336.
- FAITH IN COWAL, 2016-last update, *Faith in Cowal*. Available at <http://www.faithincowal.org/> [Feb/8, 2016].
- FARLEY, J. and HUNTER, F., eds, 2015. *Celts: Art and Identity*. London: The British Museum/National Museums Scotland.
- FARR, C., 1991. Worthy women on the Ruthwell Cross: woman as a sign in early Anglo-Saxon monasticism. In: C.E. KARKOV, M. RYAN and R.T. FARRELL, eds, *The Insular Tradition*. New York: Suny Press, pp. 45–62.
- FAWCETT, R., 2014. Structural and architectural stone. In: R. CRAMP, ed, *The Hirsell Excavations. Society for Medieval Archaeology Monograph 36*. Leeds: Society for Medieval Archaeology, pp. 185–198.
- FISHER, I., 2001. *Early Medieval Sculpture in the West Highlands and Islands* Edinburgh: Society of Antiquaries of Scotland.
- FISHER, I., 2005. Christ's Cross down into the earth: some cross-bases and their problems. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 85–94.
- FISHER, I. and GREENHILL, F.A., 1972. Two unrecorded carved stones at Tower of Lethendy, Perthshire. *Proceedings of the Society of Antiquaries of Scotland*, 104 (1971–2), pp. 238–241.
- FLEMING, D.H., 1931. *St Andrews Cathedral Museum*. Edinburgh: Oliver & Boyd.
- FORSYTH, K., 1995a. The inscriptions on the Dupplin Cross. In: C. BOURKE, ed, *From the Isles of the North*. Belfast: HMSO, pp. 237–244.
- FORSYTH, K., 1997. Some thoughts on Pictish symbols as a formal writing system. In: D. HENRY, ed, *The Worm, the Germ and the Thorn. Pictish and Related Studies presented to Isabel Henderson*. Balgavies: Pinkfoot Press, pp. 85–98.
- FORSYTH, K., 1998. Literacy in Pictland. In: H. PRYCE, ed, *Literacy in Medieval Celtic Societies*. Cambridge: Cambridge University Press, pp. 39–61.
- FORSYTH, K., 2003. *Report on Early Medieval Carved Stones from Whithorn and vicinity in the Care of Historic Scotland, March* (unpublished report to Historic Scotland).
- FORSYTH, K., 2005. *Hic memoria perpetua: the early inscribed stones of southern Scotland in context*. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 113–134.
- FORSYTH, K., 2008. The stones of Deer. In: K. FORSYTH, ed, *Studies on the Book of Deer*. Dublin: Four Courts Press, pp. 398–438.
- FORSYTH, K., 2009. The Latinus Stone: Whithorn's earliest Christian monument. In: J. MURRAY, ed, *St Ninian and the Earliest Christianity in Scotland*. Oxford: British Archaeological Reports, pp. 19–41.
- FORSYTH, K., 2011a. An ogham-inscribed slab from St Ninian's Isle, found in 1876. In: R. BARROWMAN, ed, *The Chapel and Burial Ground on St Ninian's Isle, Shetland: Excavations Past and Present. The Society for Medieval Archaeology Monograph 32*. Wakefield: Society for Medieval Archaeology, pp. 15–25.
- FORSYTH, K., 2011b. *A preliminary investigation into the scholarly potential of 3D digital documentation of Early Medieval sculpture, June 2011* (commissioned by the Centre for Digital Documentation and Visualization and Historic Scotland).
- FORSYTH, K. and DRISCOLL, S.T., 2009. Symbols of power in Ireland and Scotland, 8th–10th century. Available at <http://www.unioviado.es/reunido/index.php/TSP/article/viewFile/9481/9290>. In: F. CONDE and G. DE CASTRO VALDES, eds, *Symposium Internacional Poder y Simbología en Europa, siglos VIII–X, Oviedo, Spain, 22–27 September 2008 (Territorio Sociedad y Poder: Revista de Estudios Medievales 2)*. Gijon (Asturias): Trea, S.L., Ediciones, pp. 31–66.
- FORSYTH, K. and MALDONADO, A., 2012. *Report on early medieval carved stones from Iona in the care of Historic Scotland, March 2012* (unpublished report to Historic Scotland).
- FORSYTH, K. and MALDONADO, A., 2013. *Report on early medieval carved stones from Kirkmadrine, Galloway in the care of Historic Scotland, March 2013* (unpublished report to Historic Scotland).
- FORSYTH, K. and MALDONADO, A., In prep. *New work on Iona's early medieval carved stones (paper presented to 7th International Insular Art Conference, Galway, July 2014)*.
- FORSYTH, K. and TEDESCHI, C., 2008. Text-inscribed slates. In: C. LOWE, ed, *Inchamarnock: An Early Historic Island Monastery and its Archaeological Landscape*. Edinburgh: Society of Antiquaries of Scotland, pp. 128–150.

- FOSTER, S.M., ed, 1998a. *The St Andrews Sarcophagus: A Pictish Masterpiece and its International Connections*. Dublin: Four Courts Press.
- FOSTER, S.M., 1998b. Discovery, recovery, context and display. In: S.M. FOSTER, ed, *The St. Andrews Sarcophagus: A Pictish Masterpiece and its International Connections*. Dublin: Four Courts Press, pp. 35–62.
- FOSTER, S.M., 2001. *Place, Space and Odyssey. Exploring the Future of Early Medieval Sculpture*. Rosemarkie: Groam House Museum.
- FOSTER, S.M., 2002. Planning for early medieval sculpture. The recovery and recognition of sense, place and setting. In: L.M. GREEN and P.T. BIDWELL, eds, *Heritage of the North Sea Region. Conservation and Interpretation*. Donhead St Mary: Donhead, pp. 151–171.
- FOSTER, S.M., 2005a. Know your properties, recognise the possibilities: Historic Scotland's strategy for the interpretation of early medieval sculpture in its care. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 315–323.
- FOSTER, S.M., 2005b. Introduction. Able Minds and Practised Hands: historical fact, 21st-century aspiration. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 1–12.
- FOSTER, S.M., 2010a. The curatorial consequences of being moved, moveable or portable: the case of carved stones. *Scottish Archaeological Journal*, 32(1), pp. 15–28.
- FOSTER, S.M., 2011. Irish High Crosses exhibition, National Museums of Ireland. *Newsletter. Society of Antiquaries of Scotland*, p. 4.
- FOSTER, S.M., 2012a. Pictish parallels for Gotland's Picture Stones. In: M.H. KARNELL, ed, *Gotland's Picture Stones. Bearers of an Enigmatic Legacy*. Gotland: Fornsalen Publishing, Gotland Museum, pp. 171–182.
- FOSTER, S. and HALL, M., 2012b. Europe's early medieval sculpture: meanings, values, significance. *Newsletter of the Society for Medieval Archaeology*, 47, pp. 2–3.
- FOSTER, S.M., 2013a. Embodied energies, embedded stories: releasing the potential of casts of early medieval sculptures. In: J. HAWKES, ed, *Making Histories. Proceedings of the Sixth International Conference on Insular Art York 2011*. Donington: Shaun Tyas, pp. 339–355.
- FOSTER, S.M., 2014. *Picts, Gaels and Scots: Early Historic Scotland*. 3rd edn. Edinburgh: Birlinn.
- FOSTER, S.M., 2015a. Circulating agency: the V&A, Scotland and the multiplication of plaster casts of 'Celtic crosses'. *Journal of the History of Collections*, 27(1), pp. 73–96.
- FOSTER, S.M., 2015b. Physical evidence for the early church in Scotland. In: P. BARNWELL, ed, *Buildings for Worship in Britain: Celtic and Anglo-Saxon*. Donhead: Shaun Tyas, pp. 68–91.
- FOSTER, S., 2015c. Early Victorian replicas of the St Andrews Sarcophagus and their legacy. *History Scotland*, 15(4), pp. 32–37.
- FOSTER, S.M., 2015d. Celtic collections and imperial connections. The V&A, Scotland and the multiplication of plaster casts of 'Celtic crosses'. *History Scotland*, 27(2), pp. 16–21.
- FOSTER, S.M., 2016. Expiscation! Disentangling the later biography of the St Andrews Sarcophagus. In: F. HUNTER and A. SHERIDAN, eds, *Ancient Lives*. Leiden: Sidestone Press, pp. 165–186.
- FOSTER, S.M., BLACKWELL, A. and GOLDBERG, M., 2014. The legacy of nineteenth-century replicas for object cultural biographies: lessons in duplication from 1830s Fife. *Journal of Victorian Culture*, 19(2), pp. 137–160.
- FOSTER, S.M., 2016. Expiscation! Disentangling the later biography of the St Andrews Sarcophagus. In: F. HUNTER and A. SHERIDAN, eds, *Ancient Lives. Object, People and Place in Early Scotland. Essays for David V Clarke on his 70th Birthday*. Leiden: Sidestone Press, pp. 163–184.
- FOSTER, S.M. and CROSS, M., eds, 2005. *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney.
- FOSTER, S.M. and JONES, S., 2008. Recovering the biography of the Hilton of Cadboll cross-slab. In: H. JAMES, I. HENDERSON, S.M. FOSTER and S. JONES, eds, *A Fragmented Masterpiece. Recovering the Biography of the Hilton of Cadboll Pictish Cross-Slab*. Edinburgh: Society of Antiquaries of Scotland, pp. 205–284.
- FRASER, I., 2008. *The Pictish Symbol Stones of Scotland*. Edinburgh: RCAHMS.
- FRASER, I. and HALLIDAY, S., 2011. The early medieval landscape of Donside, Aberdeenshire. In: S.T. DRISCOLL, J. GEDDES and M.A. HALL, eds, *Pictish Progress. New Studies on Northern Britain in the Early Middle Ages*. Leiden: Brill, pp. 307–333.
- GALBRAITH, J.J., 1933. The Chi-Rho crosses on Raasay: their importance and chronological relationships. *Proceedings of the Society of Antiquaries of Scotland*, 67 (1932–3), pp. 318–320.
- GALLOWAY, P., 2006. Material culture and text: exploring the spaces within and between. In: M. HALL and

- S.W. SILLIMAN, eds, *Historical Archaeology*. Oxford: Blackwell, pp. 42–64.
- GANNON, A. and PARKER, I., 2012. Surveying St Kilda. Life on the edge. *Current Archaeology*, 263, pp. 36–41.
- GARRETT, B., 2009. *Celtic Knots with and beyond J Romilly Allen*. Zurich: Yazee Publications.
- GEDDES, J., 2011. The problems of Pictish art, 1955–2009. In: S.T. DRISCOLL, J. GEDDES and M.A. HALL, eds, *Pictish Progress. New Studies on Northern Britain in the Early Middle Ages*. Leiden: Brill, pp. 121–134.
- GEDDES, J., forthcoming. *Early Medieval Sculpture at St Vigean, Angus*. Edinburgh: Society of Antiquaries of Scotland.
- GEFREH, T., 2015. *Place, space and time: Iona's early medieval high crosses in the natural and liturgical landscape*. PhD edn. University of Edinburgh.
- GOLDBERG, M., 2015. At the western edge of the Christian world. In: J. FARLEY and F. HUNTER, eds, *Celts: Art and Identity*. London: The British Museum/National Museums Scotland, pp. 173–205.
- GOLDBERG, M., 2015. Out of a Roman world, c. AD 250–650. In: J. FARLEY and F. HUNTER, eds, *Celts: Art and Identity*. London: The British Museum/National Museums Scotland, pp. 152–171.
- GONDEK, M., 2006. Investing in sculpture: power in early-historic Scotland. *Medieval Archaeology*, 50, pp. 105–142.
- GONDEK, M., 2007. Pictish symbol stones: caught between prehistory and history. In: A. MAZEL, G. NASH and C. WADDINGTON, eds, *Art as Metaphor: The Prehistoric Rock-Art of Britain*. Oxford: Archaeopress, pp. 69–89.
- GONDEK, M., 2010. Constructing sacred space—soil, stone, water & symbols: early medieval carved stone monuments from Tillytarmont, Aberdeenshire. In: A. GEORGE, D. HAWLEY, G. NASH, J. SWANN and L. WAITE, eds, *Early Medieval Enquiries*. Bristol: Clifton Antiquarian Club, pp. 318–333.
- GONDEK, M., 2015. *Building blocks: structural contexts and carved stones in early medieval northern Britain*. *Early Medieval Stone Monuments. Materiality, Biography, Landscape*. Woodbridge: Boydell & Brewer, pp. 87–113.
- GONDEK, M., In press. Pagan and Christian, practice and belief in a Pictish landscape. In: N. EDWARDS and ET AL., eds, *Converting the Isles. Vol. 2*. Turnhout: Brepols.
- GONDEK, M. and JEFFREY, S., 2003. The re-use of a figurative panel from Eigg. *Medieval Archaeology*, 47, pp. 178–185.
- GONDEK, M. and NOBLE, G., 2006. Landscape with symbols. *British Archaeology*, 87, pp. 16–17.
- GONDEK, M., and NOBLE, G., 2011. Together as one: the landscape of the symbol stones at Rhynie, Aberdeenshire. In: S.T. DRISCOLL, J. GEDDES and M.A. HALL, eds, *Pictish Progress. New Studies on Northern Britain in the Early Middle Ages*. Leiden: Brill, pp. 281–305.
- GONDEK, M. and NOBLE, G., 2012. Archaeology News—New light on the powerful Picts of Rhynie. *History Scotland*, 12(3), pp. 14–15.
- GONDEK, M. and NOBLE, G., In press. Rhynie: new perspectives on settlement in Pictland in the 5th and 6th centuries AD and the context of Pictish symbol stones. In: S. SEMPLE and ET AL., eds, *Life on the Edge: Social, Political and Religious Frontiers in Early Medieval Europe*. Hanover: Neue Studien zur Sachsenforschung (to be confirmed).
- GORDON, C.A., 1956. Carving technique on the symbol stones of north-east Scotland. *Proceedings of the Society of Antiquaries of Scotland*, 88 (1954–6), pp. 40–46.
- GOUDIE, G., 1878. On two monumental stones with ogham inscriptions recently discovered in Shetland. *Proceedings of the Society of Antiquaries of Scotland*, 12 (1876–8), pp. 20–32.
- GOUDIE, G., 1879. On rune-inscribed relics of the Norsemen in Shetland. *Proceedings of the Society of Antiquaries of Scotland*, 13 (1878–9), pp. 136–164.
- GRAHAM, R.C., 1895. *The Carved Stones of Islay*. Glasgow: James MacLehose & Sons.
- GRAHAM, R.C., 1902. Sculptured stones of Scotland. In: J. PATON, ed, *Scottish History and Life*. Glasgow: James MacLehose and Sons, pp. 34–46.
- GRAVES, C., 1886. An attempt to decipher and explain the inscriptions on the Newton Stone. *Proceedings of the Society of Antiquaries of Scotland*, 20 (1885–6), pp. 298–313.
- HALL, M., 2013b. Iona revealed. ‘In bright, everlasting light’ arisen [review of new HS display]. *Newsletter of the Society for Medieval Archaeology*, 50, pp. 14–15.
- HALL, M.A., FORSYTH, K.F., HENDERSON, I., SCOTT, I.G., TRENCH-JELLICOE, R. and WATSON, A., 2000. Of makings and meanings: towards a cultural biography of the Crieff Burgh Cross, Strathearn, Perthshire. *Tayside and Fife Archaeological Journal*, 6, pp. 154–188.
- HALL, M. and FOSTER, S.M., Winter 2011/12. *Europe's early medieval sculpture: meanings, values, significance*.
- HALL, M.A., 2004. The early medieval landscape of Struan. *Clan Donnachaidh Annual 2004*, pp. 11–14.
- HALL, M.A., 2005a. A museum curator's adventures in Pictland. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval*

- Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 343–352.
- HALL, M.A., 2005b. Whithorn's early medieval culture on display. *Scottish Archaeological Journal*, 27(1), pp. 89–94.
- HALL, M.A., 2005c. *Kettins Cross-slab, Kettins Church, near Coupar Angus, Perth & Kinross*. Perth: Perth Museum & Art Gallery and Perth & Kinross Heritage Trust.
- HALL, M.A., 2006. Return of the Bodach. *Clan Donnachaidh Annual 2006*, pp. 13–15.
- HALL, M.A., 2007a. Liminality and loss: the material culture of St Serf's Priory, Loch Leven, Kinross-shire, Scotland. In: B. BALLIN SMITH, S. TAYLOR and G. WILLIAMS, eds, *West over Sea. Studies in Scandinavian Sea-Borne Expansion and Settlement before 1300*. Leiden: Brill, pp. 379–400.
- HALL, M.A., 2007b. *Pilgrim's footbaths?* Available at <<http://peregrinations.kenyon.edu/vol2-2/current.html>>. *Peregrinations*, 2(2).
- HALL, M.A., 2011. Tales from beyond the Pict: sculpture and its uses in and around Forteviot, Perthshire from the ninth century onwards. In: S.T. DRISCOLL, J. GEDDES and M.A. HALL, eds, *Pictish Progress. New Studies on Northern Britain in the Early Middle Ages*. Leiden: Brill, pp. 135–168.
- HALL, M.A., 2012a. Three stones, one landscape, many stories. Cultural biography and the early medieval sculptures of Inchyra and St Madoes, Carse of Gowrie, Perthshire, Scotland. In: S.H. DUDLEY, A.J. BARNES, J. BINNIE, J. PETROV and J. WALKLATE, eds, *Narrating Objects, Collecting Stories*. London and New York: Routledge, pp. 85–102.
- HALL, M.A., 2012b. Performing prehistory in early medieval Scotland: making sense of the meaning of masks on Pictish sculpture. In: H. MELLER and R. MARASZEK, eds, *Masken der Vorzeit in Europa (II). Internationale Tagung vom 19. bis 21. November 2010 in Halle (Saale)*. pp. 93–110.
- HALL, M.A., 2013a. Re-making, re-mediating and re-mythopoesis: the sculptured stone cross in popular cinema. In: J. HAWKES, ed, *Making Histories. Proceedings of the Sixth International Conference on Insular Art York 2011*. Donington: Shaun Tyas, pp. 399–415.
- HALL, M.A., 2014. The Meigle stones: a biographical overview. *Northern Studies*, 46, pp. 15–46.
- HALL, M.A., 2015a. *Lifeways in stone: memories and matter-reality in early medieval sculpture from Scotland. Early Medieval Stone Monuments. Materiality, Biography, Landscape*. Woodbridge: Boydell & Brewer, pp. 182–215.
- HALL, M.A., 2015b. Capturing biographical trajectories of early medieval sculpture, Eliseg in context [peer comment]. *Internet Archaeology*, 39.
- HALL, M.A., FRASER, I. and SCOTT, I.G., 2011. From Holy Rood to estate folly: chapters in the cultural biography of the Goodlyburn Cross, Perthshire, Scotland. *Review of Scottish Culture*, 23, pp. 1–19.
- HALL, M.A., HENDERSON, I. and SCOTT, I.G., 2005. The early medieval sculptures from Murthly, Perthshire: An interdisciplinary look at people, politics and monumental art. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Maney/Society for Medieval Archaeology, pp. 293–314.
- HALL, M.A., HENDERSON, I. and TAYLOR, S., 1998. A sculptured fragment from Pittensorn Farm, Gellyburn, Perthshire. *Tayside and Fife Archaeological Journal*, 4, pp. 129–144.
- HALL, M.A. and SCOTT, I.G., forthcoming. Forteviot, Dupplin, Invermay, Gask: The Forteviot assemblage of early medieval sculpture catalogue. In: E. CAMPBELL and S.T. DRISCOLL, eds, *Royal Forteviot: Forteviot in the first and second millennia AD*. York: Council for British Archaeology.
- HAMLIN, A.E., 2008. Bullauns and other stones. In: A.E. HAMLIN and T.E. KERR, eds, *The Archaeology of Early Christianity in the North of Ireland*. Oxford: British Archaeological Reports Brit. Ser. 460, pp. 144–154.
- HANAUSKA, P. and SCHIAVONE, R., 2011. Iona und Hornhausen. Studien zur frühmittelalterlichen Steinplastik in Europa. *Studien zue Archäologie Europas 15*. Bonn: Verlag Dr. Rudolf Habelt GmbH.
- HANNAY, R., 2014. The Neitan Stone [curator's choice of favourite item from collection]. *History Scotland*, 14(4), pp. 47.
- HARDEN, J., 2010. The Picts. Edinburgh: Historic Scotland.
- HAWKES, J., 1997. Old Testament heroes: iconographies of Insular sculptures. In: D. HENRY, ed, *The Worm, the Germ and the Thorn. Pictish and Related Studies presented to Isabel Henderson*. Balgavies: Pinkfoot Press, pp. 149–158.
- HAWKES, J., 2003. Reading stone. In: C.E. KARKOV and F. ORTON, eds, *Theorizing Anglo-Saxon Stone Sculpture. Medieval European Studies IV*. Morgantown: West Virginia University Press, pp. 5–30.
- HAWKES, J., 2005. Figuring salvation: an excursus into the iconography of the Iona crosses. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 259–275.
- HAWKES, J., 2007. Collingwood and Anglo-Saxon sculpture: art history or archaeology In: R. MOSS, ed, *Making and*

- Meaning in Insular Art*. Dublin: Four Courts Press, pp. 142–152.
- HAWKES, J., 2008. Programmes of salvation: the iconography of the crosses on Iona. In: J. HAWKES, H. DAMICO and C.E. KARKOV, eds, *Aedificia Nova: Studies in Honor of Rosemary Cramp*. Kalamazoo: Medieval Institute Press, pp. 198–225.
- HAWKES, J., 2009. Studying early Christian sculpture in England and Ireland: the object of art history or archaeology? In: J. GRAHAM-CAMPBELL and M. RYAN, eds, *Anglo-Saxon/Irish Relations Before the Vikings. Proceedings of the British Academy 157*. London: Oxford University Press for the British Academy, pp. 397–408.
- HAWORTH, L., 2013. Iona stones get makeover. *Focus*, pp. 12–13.
- HENDERSON, G., 1987. *From Durrow to Kells. The Insular Gospel-books 650–800*. London: Thames and Hudson.
- HENDERSON, G., 2007. The Dunadd Boar: A Note. *Pictish Arts Society Journal*, 17, pp. 37–39.
- HENDERSON, G., 2013. Raven into dove: assimilation and conflation in the making of a sacred image. In: J. HAWKES, ed, *Making Histories. Proceedings of the Sixth International Conference on Insular Art York 2011*. Donington: Shaun Tyas, pp. 215–228.
- HENDERSON, I., 1958. The origin centre of the Pictish symbol stones. *Proceedings of the Society of Antiquaries of Scotland*, 91 (1957–8), pp. 44–60.
- HENDERSON, I., 1967. *The Picts*. London: Thames and Hudson.
- HENDERSON, I., 1971. The meaning of the Pictish symbol stones. In: E. MELDRUM, ed, *The Dark Ages in the Highlands*. Inverness: Inverness Field Club, pp. 53–88.
- HENDERSON, I.B., 1978. Sculpture north of the Forth after the take-over by the Scots. In: J. LANG, ed, *Anglo-Saxon and Viking Age Sculpture*. Oxford: British Archaeological Reports Brit. Ser. 49, pp. 47–74.
- HENDERSON, I.B., 1982. Pictish art and the Book of Kells. In: D. WHITELOCK, D. DUMWILLE and R. MCKITTERICK, eds, *Ireland in Early Medieval Europe: Studies in Memory of Kathleen Hughes*. Cambridge: Cambridge University Press, pp. 79–105.
- HENDERSON, I.B., 1983. Pictish vine-scroll ornament. In: A. CONNOR and D.V. CLARKE, eds, *From the Stone Age to the 'Forty-Five. Studies presented to R.B.K. Stevenson, former Keeper National Museum of Antiquities of Scotland*. Edinburgh: John Donald Publishers Ltd, pp. 243–268.
- HENDERSON, I.B., 1986. The 'David cycle' in Pictish art. In: J. HIGGITT, ed, *Early Medieval Sculpture in Britain and Ireland*. Oxford: British Archaeological Reports Brit. Ser. 152, pp. 87–123.
- HENDERSON, I., 1987a. *Early Christian monuments of Scotland* displaying crosses but no other ornament. In: A. SMALL, ed, *The Picts: A New Look at Old Problems*. Dundee: Oxford University Computing Service, pp. 45–58.
- HENDERSON, I.B., 1987b. The Book of Kells and the snake-boss on Pictish cross-slabs and the Iona crosses. In: M. RYAN, ed, *Ireland and Insular Art A.D. 500–1200*. Dublin: Royal Irish Academy, pp. 56–65.
- HENDERSON, I., 1990. *The Art and Function of Rosemarkie's Pictish Monuments*. Rosemarkie: Groam House Museum.
- HENDERSON, I., 1993a. Introduction. The making of *The Early Christian Monuments of Scotland*. In: J.R. ALLEN and J. ANDERSON, eds, *The Early Christian Monuments of Scotland*. Balgavies: Pinkfoot Press, pp. thirteen–forty.
- HENDERSON, I., 1993b. The shape and decoration of the cross on Pictish cross-slabs carved in relief. In: R.M. SPEARMAN and J. HIGGITT, eds, *The Age of Migrating Ideas. Early Medieval Art in Northern Britain and Ireland*. Stroud: National Museums of Scotland/Alan Sutton Publishing, pp. 209–218.
- HENDERSON, I., 1994. The insular and continental context of the St Andrews Sarcophagus. In: B.E. CRAWFORD, ed, *Scotland in Dark Age Europe*. St Andrews: St John's House, pp. 71–102.
- HENDERSON, I., 1995. Pictish art and its place within the history of Insular art. In: E.H. NICOLL, ed, *A Pictish Panorama. The Story of the Picts and a Pictish Bibliography*. Balgavies, Angus: The Pinkfoot Press, pp. 14–19.
- HENDERSON, I.B., 1997a. *Pictish Monsters: Symbol, Text and Image*. Cambridge: Department of Anglo-Saxon, Norse and Celtic, University of Cambridge.
- HENDERSON, I., 1997b. Variations on an old theme. Panelled zoomorphic ornament on Pictish sculpture at Nigg, Easter Ross, and St Andrews, Fife, and in the Book of Kells. In: C.E. KARKOV, M. RYAN and R.T. FARRELL, eds, *The Insular Tradition*. New York: Suny Press, pp. 143–166.
- HENDERSON, I., 1998a. Descriptive catalogue of the surviving parts of the monument. In: S.M. FOSTER, ed, *The St. Andrews Sarcophagus: A Pictish Masterpiece and its International Connections*. Dublin: Four Courts Press, pp. 19–35.
- HENDERSON, I., 1998b. Primus inter pares: the St Andrews Sarcophagus and Pictish sculpture. In: S.M. FOSTER, ed, *The St. Andrews Sarcophagus: A Pictish Masterpiece and its International Connections*. Dublin: Four Courts Press, pp. 97–167.

- HENDERSON, I., 1998c. Monasteries and sculpture in the Insular pre-Viking Age: the Pictish evidence. In: B. THOMPSON, ed, *Monasteries and Society in Medieval England. Proceedings of the 1994 Harlaxton Symposium*. Stamford: Paul Watkins, pp. 125–145.
- HENDERSON, I., 1999a. The Dupplin Cross: a preliminary consideration of its art-historical context. In: J. HAWKES and S. MILLS, eds, *Northumbria's Golden Age*. Stroud: Sutton Publishing, pp. 161–177.
- HENDERSON, I., 1999b. The social function of Pictish sculpture at Elgin and Kinneddar (Moray) and Portmahomack (Tarbat, Easter Ross). In: S. BENNETT, ed, *Pictish Art. A Record of the Conference held by Elgin Museum and Moray Society 22nd and 23rd August 1998*. Elgin: The Moray Society, pp. 11–15.
- HENDERSON, I., 2005. Fragments of significance: the whole picture. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 69–84.
- HENDERSON, I. and HENDERSON, G., 2004. *The Art of the Picts*. London: Thames and Hudson.
- HENRY, D., ed, 1997. *The Worm, the Germ and the Thorn. Pictish and Related Studies Presented to Isabel Henderson*. Balgavies: Pinkfoot Press.
- HEWISON, J.K., 1913. Notes on the runic roods of Ruthwell and Bewcastle. *Proceedings of the Society of Antiquaries of Scotland*, 47 (1912–13), pp. 348–359.
- HIGGITT, J., 1982. The Pictish Latin inscription at Tarbat in Ross-shire. *Proceedings of the Society of Antiquaries of Scotland*, 112, pp. 300–321.
- HIGGITT, J., 1997. Early medieval inscriptions in Britain and Ireland and their audiences. In: D. HENRY, ed, *The Worm, the Germ and the Thorn. Pictish and Related Studies presented to Isabel Henderson*. Balgavies: Pinkfoot Press, pp. 67–78.
- HIGGITT, J., 2005. Towards a 'new ECMS': the proposal for a new Corpus of Early Medieval Sculpture in Scotland. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 375–379.
- HILL, P., 2003. The Stone of Destiny examined: an overview and discussion. In: R.D.E. WELANDER, D.J. BREEZE and T.O. CLANCY, eds, *The Stone of Destiny: Artefact and Icon*. Edinburgh: Society of Antiquaries of Scotland, pp. 11–31.
- HILTS, C., 2012. Tunnel vision. Maeshowe, Orkney. *Current Archaeology*, 271, pp. 42–43.
- HISTORIC ENVIRONMENT SCOTLAND, Explore the Collections. Available at <http://collections.historic-scotland.gov.uk/simpleSearch.jsp>.
- HISTORIC SCOTLAND, Early Medieval Carved Stones. Available at <http://www.historic-scotland.gov.uk/index/heritage/valuingourheritage/carvedstones/early-medieval-carved-stones.htm>.
- HISTORIC SCOTLAND, 1994. Appendix in I. Maxwell, 'The preservation of Dark Age Sculpture'. In: E.O. BOWMAN and N.M. ROBERTSON, eds, *Stones, Symbols and Stories: Aspects of Pictish Studies. Proceedings from the Conferences of the Pictish Arts Society, 1992*. Edinburgh: Pictish Arts Society, pp. 3–18.
- HISTORIC SCOTLAND CONSERVATION GROUP, 2012. *Analysis of St Andrews Sarcophagus May 2012*. Unpubl report XRF00/MEY/1204.
- HISTORY SCOTLAND, 2012. Archaeology News—Archaeological excavation discovers early medieval royal stronghold in Galloway. *History Scotland*, 12(5), pp. 13.
- HOBMA, H., O'DONNELL, D.P., KARKOV, K., FOSTER, S., GRAHAM, J., OSBORN, W., DEL TURCO, R.R., BROATCH, R., BROATCH, S., CALLIERI, M. and DELLEPIANE, M., forthcoming. Modern impact on the fabric of the Ruthwell Cross. *Old English Newsletter*.
- HULL, D., 2003. *Celtic and Anglo-Saxon Art: Geometric Aspects*. Liverpool: Liverpool University Press.
- HUMPHREY, H. and KING, M., 2014. It's all in the presentation [a newly identified panel offers a key to the east side of the Downpatrick high cross]. *Archaeology Ireland*, 28(4), pp. 26–28.
- HUTCHESON, A., 1896. Notice of an early inscribed mural monument and of an undescribed sculptured stone preserved in the Parish Church of Tealing, Forfarshire. *Proceedings of the Society of Antiquaries of Scotland*, 30 (1895–96), pp. 41–48.
- IMER, L.M., 2015. The Danish runestones—when and where? *Danish Journal of Archaeology*, 3(2), pp. 1–11.
- INGLIS, J., 1987. Patterns in stone, patterns in population: symbol stones seen from beyond the Mounth. In: A. SMALL, ed, *The Picts: A New Look at Old Problems*. Dundee: Oxford University Computing Service, pp. 73–79.
- JACKSON, A., 1984. *The Symbol Stones of Scotland: A Social Anthropological Resolution of the Problem of the Picts*. Kirkwall: The Orkney Press.
- JAMES, H., HENDERSON, I., FOSTER, S.M. and JONES, S., 2008. *A Fragmented Masterpiece. Recovering the Biography of the Hilton of Cadboll Pictish Cross-Slab*. Edinburgh: Society of Antiquaries of Scotland.
- JAMES, H.F., 2005. Pictish cross-slabs: an examination of their original archaeological context. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp.

95–112.

- JEFFREY, S., 2003. *Three dimensional modeling of Scottish Early Medieval Sculpted Stones*. Available at http://archaeologydataservice.ac.uk/archives/view/jeffrey_2004/. PhD edn. University of Glasgow.
- JEFFREY, S., 2005. The missing dimension: future directions in digital recording of early medieval sculptured stone. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 353–36.
- JONES, S., 2004. *Early Medieval Sculpture and the Production of Meaning, Value and Place: The Case of Hilton of Cadboll*. Available at <http://conservation.historic-scotland.gov.uk/publication-detail.htm?pubid=7893>. Edinburgh: Historic Scotland. Research Report.
- JONES, S., 2005. 'That stone was born here and that's where it belongs': Hilton of Cadboll and the negotiations of identity, ownership and belonging. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology, pp. 37–53.
- KARKOV, C.E., 2003. Naming and renaming: the inscription of gender in Anglo-Saxon sculpture. In: C.E. KARKOV and F. ORTON, eds, *Theorizing Anglo-Saxon Stone Sculpture. Medieval European Studies IV*. Morgantown: West Virginia University Press, pp. 31–64.
- KARKOV, C.E. and ORTON, F., eds, 2003. *Theorizing Anglo-Saxon Stone Sculpture. Medieval European Studies IV*. Morgantown: West Virginia University Press.
- KARNELL, M.H., ed, 2012. *Gotland's Picture Stones. Bearers of an Enigmatic Legacy*. Gotland: Fornsalen Publishing, Gotland Museum.
- KASTEN, M., In prep. *Three-dimensional Imaging of the Govan Stones*. PhD edn. University of Glasgow.
- KELLY, D., 1993. The relationships of the crosses of Argyll: the evidence of form. In: R.M. SPEARMAN and J. HIGGITT, eds, *The Age of Migrating Ideas. Early Medieval Art in Northern Britain and Ireland*. Stroud: National Museums of Scotland/Alan Sutton Publishing, pp. 219–229.
- KERMACK, S., 2009. The Pictish Symbols and the Vita Sancti Columbae. *Pictish Arts Society Occasional Paper New Series*, 1. Brechin: The Pinkfoot Press.
- KERMODE, P.M.C., 1907 (repr. 1994). *Manx Crosses*. Balgavies: Pinkfoot Press.
- KILPATRICK, K.A., 2011. The iconography of the Papil Stone: sculptural and literary comparisons with a Pictish motif. *Proceedings of the Society of Antiquaries of Scotland*, 141, pp. 159–205.
- KING, M., 2014. Moving the Downpatrick High Cross. *Lecale Review*, 12, pp. 7–12.
- KITZLER ÅHFELDT, L., 2012. Picture Stone workshops and handicraft traditions. In: M.H. KARNELL, ed, *Gotland's Picture Stones. Bearers of an Enigmatic Legacy*. Gotland: Fornsalen Publishing, Gotland Museum, pp. 183–194.
- KRUSE, A., 2013. Columba and Jonah—a motif in the dispersed art of Iona. *Northern Studies*, 45, pp. 1–26.
- LACAILLE, A.D., 1953. Stone basins. *Glasgow Archaeological Society Transactions*, 12, pp. 41–93.
- LIDLAW, W., 1905. Sculptured and inscribed stones in Jedburgh and vicinity. *Proceedings of the Society of Antiquaries of Scotland*, 39 (1904–05), pp. 21–54.
- LAING, D., 1856. On the present state of the ruins of Iona, and their preservation. In a letter to the Hon Lord Murray. *Proceedings of the Society of Antiquaries of Scotland*, 2 (1855–6), pp. 7–12.
- LAING, L., 2000. The chronology and context of Pictish relief sculpture. *Medieval Archaeology*, 44, pp. 81–114.
- LAING, L., OAKLEY, E., SASSIN, A.E. and TOMPSETT, I., 2013. Excavations at the early and later medieval site of Ballachly, Dunbeath, Caithness, 2007–10. *Proceedings of the Society of Antiquaries of Scotland*, 143, pp. 265–302.
- LANG, J.T., 1972. Hogback monuments of Scotland. *Proceedings of the Society of Antiquaries of Scotland*, 105 (1972–4), pp. 206–235.
- LANG, J., 1994. The Easby Cross. *The Richmond Review*, 17, pp. 14–17.
- LEE, R., 2010 [published 2013]. The use of information theory to determine the language character type of Pictish symbols. *Scottish Archaeological Journal*, 32(2), pp. 137–176.
- LEE, R., PHILIP, J. and ZIMAN, P., 2010. Pictish symbols revealed as a written language through application of Shannon entropy. Available at <<http://rspa.royalsocietypublishing.org/content/royprsa/early/2010/03/26/rspa.2010.0041.full.pdf>>. *Proceedings of the Royal Society A*, pp. 1–16.
- LERMA, J.L. and MUIR, C., 2014. Evaluating the 3D documentation of an early Christian upright stone with carvings from Scotland with multiples images. *Journal of Archaeological Science*, 46, pp. 311–318.
- LOWE, C., 2006. *Excavations at Hoddam, Dumfriesshire*. Edinburgh: Society of Antiquaries of Scotland.
- LOWE, C., 2008. *Inchmarnock. An Early Historic Island Monastery and its Archaeological Landscape*. Edinburgh: Society of Antiquaries of Scotland.
- MAC LEAN, D., 1985. *Early medieval sculpture in the West*

- Highlands and Islands of Scotland*. PhD edn. University of Edinburgh.
- MAC LEAN, D., 1997. Maelrubai, Applecross and the late Pictish contribution west of Druimalban. In: D. HENRY, ed, *The Worm, the Germ and the Thorn. Pictish and Related Studies presented to Isabel Henderson*. Balmuccie: Pinkfoot Press, pp. 173–187.
- MACGREGOR, G., 2009. Changing people, changing landscapes: excavations at the Carrick, Midross, Loch Lomond. *Historic Argyll*, 14, pp. 8–13.
- MACK, A., 1997. *Field Guide to the Pictish Symbol Stones*. Balmuccie: Pinkfoot Press.
- MACK, A., 1998. *The Association of Pictish Symbol Stones with Ecclesiastical, Burial, and 'Memorial' Areas*. Balmuccie: Pinkfoot Press.
- MACKAY, W., 1886. Notice of two sculptured stones in Glen Urquhart. *Proceedings of the Society of Antiquaries of Scotland*, 20 (1885–6), pp. 358–360.
- MALDONADO, A., 2012. Review of Pictish Progress. *Innes Review*, 63(1), pp. 96–101.
- MAXWELL, I., 2005. Scotland's early medieval sculpture in the 21st century: a strategic overview of conservation problems, maintenance and replication methods. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 159–174.
- MAXWELL, J.S., 1899. *Sculptured Stones in the Kirkyard of Govan*. Govan: Seventy-five copies printed for private circulation.
- MCKENZIE, A., 2012. No stone unturned [conservation of Appiehouse Stone from Orkney]. *Focus*, pp. 14.
- MEYER, K.S., 2005. Bird, beast or fish? Problems of identification and interpretation of the iconography carved on the Tarbat peninsula cross-slabs. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 243–257.
- MEYER, K., 2011. Saints, scrolls and serpents: theorising a Pictish liturgy on the Tarbat peninsula. In: S.T. DRISCOLL, J. GEDDES and M.A. HALL, eds, *Pictish Progress. New Studies on Northern Britain in the Early Middle Ages*. Leiden: Brill, pp. 169–200.
- MILLER, S. and RUCKLEY, N.A., 2001. *Geological survey of early medieval sculptures, St Vigean, Angus*. National Museums of Scotland on behalf of Historic Scotland. Phase 2.
- MILLER, S. and RUCKLEY, N.A., 2005. The role of geological analysis of monuments: a case study from St Vigean and related sites. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 277–292.
- MILNE, J., 1906. *The Sculptured Stone of Aberlemno*. Aberdeen.
- MITCHELL, A., 1872. Inscribed stones at Kirkmadrine, in the parish of Stoneykirk, County of Wigtown. *Proceedings of the Society of Antiquaries of Scotland*, 9 (1870–72), pp. 568–586.
- MIZIN, V., 2013. Footprint stones: summarizing a century of petrosomatoglyphic study. Time and Mind. *The Journal of Archaeology, Consciousness and Culture*, 7(3), pp. 297–307.
- MOWBRAY, C.L., 1936. Eastern influence on carvings at St Andrews and Nigg, Scotland. *Antiquity*, 10, pp. 428–440.
- MUIR, C., 2005. The containment of Scottish carved stones *in situ*: an environmental study of the efficacy of glazed enclosures. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 175–186.
- NELSON, K., 2012. The Pictish stones: a seductive riddle [theory stones carved in a star polygon framework]. *Historic Scotland*, 13(6), pp. 30–31.
- NICOLL, E.H., ed, 1995. *A Pictish Panorama: The Story of the Picts and a Pictish Bibliography* (compiled by Jack Burt). Balmuccie: Pinkfoot Press.
- NOBLE, G. and GONDEK, M., 2011a. A Dark Age power centre at Rhynie. *British Archaeology*, 120, pp. 36–41.
- NOBLE, G. and GONDEK, M., 2011b. Symbol stones in context: excavations at Rhynie, an undocumented Pictish power centre of the 6th–7th centuries AD? *Medieval Archaeology*, 55, pp. 317–321.
- NOBLE, G. and GONDEK, M., 2014. 'A very royal place'. Rhynie and the Picts. *Current Archaeology*, 289, pp. 22–28.
- NOBLE, G. and GONDEK, M., forthcoming (2017). The land before symbol stones: a geophysical survey of Rhynie, Aberdeenshire and the excavation of a Middle Bronze Age structure near the Craw Stane, Barflat. *Proceedings of the Society of Antiquaries of Scotland*.
- NOBLE, G., GONDEK, M., CAMPBELL, E. and COOK, M., 2013. Between prehistory and history: the archaeological detection of social change among the Picts. *Antiquity*, 87(338), pp. 1136–1150.
- NORTHLIGHT HERITAGE, nd [2014?]. *Weaving Truth with Trust [textile created at Govan Old Parish Church with inspiration from the Govan Stones]*. Northlight Heritage.
- Ó CARRAGÁIN, É., 2005. *Ritual and the Rood: Liturgical Images and the Old English Poems of the Dream of the Rood*

- Tradition*. London; Toronto; New York: British Library ; University of Toronto Press.
- OKASHA, E., 1985. The non-ogham inscriptions of Pictland. *Cambridge Early Medieval Studies*, 9, pp. 43–69.
- ORTON, F., 2003. Rethinking the Ruthwell and Bewcastle monuments: some strictures on similarity; some questions of history. In: C.E. KARKOV and F. ORTON, eds, *Theorizing Anglo-Saxon Stone Sculpture. Medieval European Studies IV*. Morgantown: West Virginia University Press, pp. 65–92.
- ORTON, F. and WOOD, I. WITH LEES, C., 2007. *Fragments of History: Rethinking the Ruthwell and Bewcastle Monuments*. Manchester: Manchester University Press.
- PADEL, O.J., 1972. *The inscriptions of Pictland*. PhD edn. University of Edinburgh.
- PHILIPS, A.C., 1958. *The Fallen Cross*. Bradford: Percy Lund, privately published.
- PITT-RIVERS, A.H.L.F., 1891. Models of ancient monuments, and on some points in the development of the Celtic cross in Scotland. *Proceedings of the Society of Antiquaries of London*, 13 (1889–91), pp. 174–181.
- PRAG, J., 2010-last update, *The colouring of the Bewcastle and Ruthwell Crosses*. [Woruldhord Project]. Available at <http://poppy.nsms.ox.ac.uk/woruldhord/contributions/369> [02/13, 2015].
- PRESTON-JONES, A. and OKSAHA, E., 2013. *Early Cornish Sculpture. Corpus of Anglo-Saxon Stone Sculpture Volume XI*. Oxford: Oxford University Press, for British Academy.
- PROUDFOOT, E., 1997. Abernethy and Mugdrum: towards reassessment. In: D. HENRY, ed, *The Worm, the Germ and the Thorn. Pictish and Related Studies presented to Isabel Henderson*. Balgavies: Pinkfoot Press, pp. 47–63.
- PULLIAM, H., 2013. Blood, water and stone: the performative cross. In: J. HAWKES, ed, *Making Histories. Proceedings of the Sixth International Conference on Insular Art York 2011*. Donington: Shaun Tyas, pp. 262–278.
- PULLIAM, H., 2015. Tracing the Celts? Survival and transformation, c. AD 800–1600. In: J. FARLEY and F. HUNTER, eds, *Celts: Art and Identity*. London: The British Museum/National Museums Scotland, pp. 206–233.
- RADFORD, C.A.R., 1954. Hoddom. *Transactions of the Dumfriesshire and Galloway Natural History and Antiquarian Society*, 31, pp. 174–197.
- RADFORD, C.A.R., 1955. Two Scottish shrines: Jedburgh and St Andrews. *Archaeological Journal*, 112, pp. 43–60.
- RAMSAY, W.M., 1904. Early monuments and the archaic art of the north-east of Scotland. *Museums Journal*, 3 (1903–04), pp. 149–158.
- RCAHMS, 1982. *Argyll: An Inventory of the Monuments, Volume 4. Iona*. Glasgow: HMSO.
- RCAHMS, 1985. *Pictish Symbol Stones. A Handlist*. Edinburgh: RCAHMS.
- RCAHMS, 1994a. *South-East Perth. An Archaeological Landscape*. Edinburgh: RCAHMS.
- RCAHMS, 1994b. *Pictish Symbol Stones. A Handlist*. Edinburgh: RCAHMS.
- RCAHMS, 1999. *Pictish Symbol Stones. An Illustrated Gazetteer*. Edinburgh: RCAHMS.
- RCAHMS, 2007a. *In the Shadow of Bennachie. A Field Archaeology of Donside, Aberdeenshire*. Edinburgh: RCAHMS/Society of Antiquaries of Scotland.
- RCAHMS, 2007b. *Early Medieval Carved Stones at Brechin*. Edinburgh: RCAHMS.
- RCAHMS, 2008a. *Canna: The Archaeology of a Hebridean Landscape*. Edinburgh: RCAHMS.
- RCAHMS, 2008b. *Early Medieval Sculpture in Angus Council Museums*. Edinburgh: RCAHMS.
- REDKNAP, M. and LEWIS, J.M., 2007. *A Corpus of Early Inscribed Stones and Stone Sculpture in Wales. Volume I. Breconshire, Glamorgan, Monmouthshire, Radnorshire, and geographically contiguous areas of Herefordshire and Shropshire*. Cardiff: University of Wales Press.
- RIKSANTIKVARIEÄMBETET [SWEDISH NATIONAL HERITAGE BOARD], *Runor och runstenar*. Available at <http://www.raa.se/kulturarvet/ärkeologi-fornlamningar-och-fynd/runstenar/>.
- RITCHIE, A., ed, 1994a. *Govan and its Early Medieval Sculpture*. Stroud: Alan Sutton Publishing Ltd.
- RITCHIE, A., 1994b. *Perceptions of the Picts: from Eumenius to John Buchan*. Rosemarkie: Groam House Museum.
- RITCHIE, A., 1995. Meigle and lay patronage in Tayside in the 9th and 10th centuries AD. *Tayside and Fife Archaeological Journal*, 1, pp. 1–10.
- RITCHIE, A., 1997. The Picts in Shetland. In: D. HENRY, ed, *The Worm, the Germ and the Thorn. Pictish and Related Studies presented to Isabel Henderson*. Balgavies: Pinkfoot Press, pp. 35–46.
- RITCHIE, A., 1999. Why were the Moray Firthlands so important in Pictland? In: S. BENNETT, ed, *Pictish Art. A Record of the Conference held by Elgin Museum and Moray Society 22nd and 23rd August 1998*. Elgin: The Moray Society, pp. 3–6.
- RITCHIE, A., 2004. *Hogback Gravestones at Govan and*

- Beyond*. Glasgow: Friends of Govan Old.
- RITCHIE, A., 2008. A fragment of a Pictish symbol-bearing slab with carving in relief from Mail, Cunningsburgh. *Proceedings of the Society of Antiquaries of Scotland*, 138, pp. 185–192.
- RITCHIE, A., 2011. Cemeteries of platform cairns and long cists around Sinclair's Bay, Caithness. *Proceedings of the Society of Antiquaries of Scotland*, 141, pp. 125–143.
- RITCHIE, A., 2012. From Colonsay to Whithorn: the work of a 19th-century antiquary, William Galloway. *Proceedings of the Society of Antiquaries of Scotland*, 142, pp. 435–465.
- RITCHIE, A., SCOTT, I.G. and GRAY, T.E., 2006. *People of Early Medieval Scotland from Contemporary Images*. Balgavies: Pinkfoot Press.
- RITCHIE, J.N.G., 1997. Recording Early Christian monuments in Scotland. In: D. HENRY, ed, *The Worm, the Germ and the Thorn. Pictish and Related Studies presented to Isabel Henderson*. Balgavies: Pinkfoot Press, pp. 119–128.
- RITCHIE, J.N.G., 1998. *Recording Early Christian Monuments in Scotland*. Rosemarkie: Groam House Museum.
- ROBERTSON, N.M., 1997. The early medieval carved stones of Fortingall. In: D. HENRY, ed, *The Worm, the Germ and the Thorn. Pictish and Related Studies presented to Isabel Henderson*. Balgavies: Pinkfoot Press, pp. 133–148.
- RODWELL, W., 2013. *The Coronation Chair and Stone of Scone: History, Archaeology and Conservation*. Oxford and Oakville: Oxbow Books.
- ROGER, J.C., 1856. Notice of a sculptured sarcophagus, and other sepulchral monuments, recently discovered in the churchyard of Govan. *Proceedings of the Society of Antiquaries of Scotland*, 2 (1855–6), pp. 161–165.
- ROGER, J.C., 1885. Notes on two additional runic ristings in St Molio's Cave, Holy Isle, Lamlash Bay, Island of Arran. *Proceedings of the Society of Antiquaries of Scotland*, 19 (1884–5), pp. 378–380.
- RUNES, MONUMENTS AND MEMORIAL CARVINGS, Runes, Monuments and Memorial Carvings. Available at <http://monumentsnetwork.org/> [Feb/26, 2016].
- SAMSON, R., 1992. The reinterpretation of the Pictish symbols. *Journal of the British Archaeological Association*, 145, pp. 29–65.
- SCOTT, I.G., 1997. Illustrating early medieval carved stones. In: D. HENRY, ed, *The Worm, the Germ and the Thorn. Pictish and Related Studies presented to Isabel Henderson*. Balgavies: Pinkfoot Press, pp. 129–132.
- SCOTT, I.G. and RITCHIE, A., 2009. *Pictish and Viking-Age Carvings from Shetland*. Edinburgh: RCAHMS.
- SCOTT, I.G. and RITCHIE, A., 2014. Pictish symbols stones and early cross-slabs from Orkney. *Proceedings of the Society of Antiquaries of Scotland*, 144, pp. 169–204.
- SCOTTISH EXECUTIVE, 2005. *Carved Stones. Scottish Executive Policy and Guidance*. Edinburgh: Historic Scotland.
- SCOTT-MONCRIEFF, G., 1938. *The Stones of Scotland*. London: B T Batsford Ltd.
- SCOTT-MONCRIEFF, G., 1951. *Living Traditions. 1951 Festival Exhibition of Scottish Architecture & Crafts*. Royal Scottish Museum June 25–September 15. Catalogue. Glasgow: HMSO.
- SERIGHT, S., 1999. Rosemarkie's Pictish stones. In: S. BENNETT, ed, *Pictish Art. A Record of the Conference held by Elgin Museum and Moray Society 22nd and 23rd August 1998*. Elgin: The Moray Society, pp. 10–10.
- SETON, G., 1887. Statement relative to the Ruthwell Cross. *Proceedings of the Society of Antiquaries of Scotland*, 21 (1886–7), pp. 194–197.
- SIMONSSON, H., 2012. Preserve, restore or reconstruct picture stones and runestones. In: M.H. KARNELL, ed, *Gotland's Picture Stones. Bearers of an Enigmatic Legacy*. Gotland: Fornsalen Publishing, Gotland Museum, pp. 195–202.
- SIMPSON, J.Y., 1862. On the Cat-Stane, Kirkliston: is it not the tombstone of the grandfather of Hengist and Horsa? *Proceedings of the Society of Antiquaries of Scotland*, 4 (1860–62), pp. 119–165.
- SKENE, W.F., 1864. Notes on the ogham inscription on the Newton Stone. *Proceedings of the Society of Antiquaries of Scotland*, 5 (1862–4), pp. 289–298.
- SKENE, W.F., 1874. Notice of an ogham inscription in the churchyard of Aboyne, Aberdeenshire. *Proceedings of the Society of Antiquaries of Scotland*, 10 (1872–4), pp. 602–603.
- SMALL, A., ed, 1987. *The Picts. A New Look at Old Problems*. Dundee: Oxford University Computing Service.
- SMITH, J.A., 1856. Notes on some sepulchral cists, and on the Latin inscription upon one of the standing stones near Yarrow Kirk, Selkirkshire. *Proceedings of the Society of Antiquaries of Scotland*, 2 (1855–6), pp. 484–489.
- SMITH, J.A., 1866. Notice of a long-shaped cist, with skeleton, found near Yarrow Kirk, Selkirkshire, from communications by Rev. James Russell, Yarrow. *Proceedings of the Society of Antiquaries of Scotland*, 6 (1864–6), pp. 62–70.
- SOUTHESK, E.O., 1883. The Newton Stone. *Proceedings of the Society of Antiquaries of Scotland*, 17 (1882–3), pp. 21–45.

- SOUTHESK, E.O., 1886. The oghams on the Brodie and Aquhollie Stones, with notes on the inscriptions of the Golspie and Newton Stones, and a list of the oghams in Scotland. *Proceedings of the Society of Antiquaries of Scotland*, 20 (1885–6), pp. 14–40.
- STEPHENS, G., 1874. Note of a fragment of a rune-inscribed stone from Aith's Voe, Cunningsburgh, Shetland, now in the museum. *Proceedings of the Society of Antiquaries of Scotland*, 10 (1872–4), pp. 425–430.
- STEVENSON, R.B.K., 1955 (repr. 1980). Pictish Art. In: F.T. WAINWRIGHT, ed, *The Problem of the Picts*. Perth: Methven Press, pp. 97–128.
- STEVENSON, R.B.K., 1956. The chronology and relationships of some Irish and Scottish crosses. *Journal of the Royal Society of Antiquaries of Ireland*, 86, pp. 84–96.
- STEVENSON, R.B.K., 1959. The Inchyra stone and some other unpublished early Christian monuments. *Proceedings of the Society of Antiquaries of Scotland*, 92 (1958–9), pp. 33–55.
- STEVENSON, R.B.K., 1971. Sculpture in Scotland in the 6th–9th centuries A.D. In: V. MILOJCIC, ed, *Kolloquium über Spätantike und frühmittelalterliche Skulptur, Heidelberg 1970*. pp. 65–74.
- STEVENSON, R.B.K., 1981b. Christian sculpture in Norse Shetland. *Fróðskaparrit*, 28–29, pp. 283–292.
- STEVENSON, R.B.K. and CLOSE-BROOKS, J., 1981. *A List of Dark Age Sculpture and Inscribed Stones in the National Museums of Scotland*. Compiled 1981. .
- STEVENSON, R.B.K. and CLOSE-BROOKS, J., 1982. *Dark Age Sculpture. A Selection from the Collections of the National Museum of Antiquities of Scotland*. Edinburgh: HMSO.
- STEVICK, R., 2011. The forms of two crosses on Pictish cross-slabs: Rossie Priory, Perthshire and Glamis No.2. In: S.T. DRISCOLL, J. GEDDES and M.A. HALL, eds, *Pictish Progress. New Studies on Northern Britain in the Early Middle Ages*. Leiden: Brill, pp. 201–220.
- STUART, J., 1856. *Sculptured Stones of Scotland*. Aberdeen: Spalding Club.
- SWEDISH NATIONAL HERITAGE BOARD, 2015. *Runverket. The Runic Unit of the Swedish National Heritage Board. A National Resource for a Unique Cultural Heritage*. Sweden [not stated]: Swedish National Heritage Board.
- THE DISCOVERY PROGRAMME, 2014-last update, Marigold Stone [Cardonagh, Donegal]. Available at <https://sketchfab.com/models/1958f8c5a86b4644bb130d1c67d46535> [03/15, 2014].
- THE PICTISH ARTS SOCIETY, The Pictish Arts Society. Available at <http://www.thepictishartsociety.org.uk/> [April/03, 2016].
- THICKPENNY, C.R., *In prep. Key-pattern in Insular art: unlocking regional connections and cultural history, AD 600–1000*. PhD edn. University of Glasgow.
- THOMAS, C.(harles), 1961. The animal art of the Scottish Iron Age and its origins. *Archaeological Journal*, 118, pp. 14–64. THOMAS, C., 1963. The interpretation of the Pictish symbols. *Archaeological Journal*, 120, pp. 31–97.
- THOMAS, C., 1967. An Early Christian cemetery and chapel on Ardwall Isle, Kirkcudbright. *Medieval Archaeology*, 11, pp. 127–88.
- THOMAS, C., 1971. *The Early Christian Archaeology of North Britain*. Oxford: Oxford University Press.
- THOMAS, C., 1973. Sculptured stones and crosses from St Ninian's Isle and Papil. In: A. SMALL, C. THOMAS and D.M. WILSON, eds, *St Ninian's Isle and its Treasure*. Oxford: Oxford University Press, pp. 8–44.
- THOMAS, C., 1984. Abercorn and the Provincia Pictorum. In: R. MIKET and C. BURGESS, eds, *Between and Beyond the Walls*. Edinburgh: John Donald, pp. 327–337.
- THOMAS, C., 1992. *Whithorn's Christian Beginnings. First Whithorn Lecture 19th September 1992*. Whithorn: Friends of the Whithorn Trust.
- THOMAS, C., 1998. Form and function. In: S.M. FOSTER, ed, *The St. Andrews Sarcophagus: A Pictish Masterpiece and its International Connections*. Dublin: Four Courts Press, pp. 84–96.
- THOMAS, C.(olleen), 2013. Missing models: visual narrative in the Insular Paul and Anthony panels. In: J. HAWKES, ed, *Making Histories. Proceedings of the Sixth International Conference on International Art York 2011*. Donington: Shaun Tyas, pp. 77–89.
- THOMAS, F.W.L., 1879. Dunadd, Glassary, Argyllshire; the place of inauguration of the Dalriadic kings. *Proceedings of the Society of Antiquaries of Scotland*, 13 (1878–9), pp. 28–47.
- THOMSON, A., 1864. Notice of various attempts which have been made to read and interpret the inscription on the Newton Stone, Garioch, Aberdeenshire. *Proceedings of the Society of Antiquaries of Scotland*, 5 (1862–4), pp. 224–234.
- THOMSON, G., 2013. Contextualisation and typology of disc-headed and trapezoidal gravemarker forms in Scotland. *Scottish Archaeological Journal*, 34–5 (2012–13), pp. 1–24.
- TRENCH-JELICOE, R., 1997. Pictish and related harps. In: D. HENRY, ed, *The Worm, the Germ and the Thorn. Pictish and Related Studies presented to Isabel Henderson*. Balgavies: Pinkfoot Press, pp. 159–172.
- TRENCH-JELICOE, R., 2002. Manx sculptured monuments and the early Viking Age. In: P. DAVEY and D.

- FINLAYSON, eds, *Mannin Revisited. Twelve Essays on Manx Culture and Environment*. Edinburgh: The Scottish Society for Northern Studies, pp. 11–34.
- TRENCH-JELLICOE, R., 2005. A richly decorated cross-slab from Kilduncan House, Fife: description and analysis. *Proceedings of the Society of Antiquaries of Scotland*, 135, pp. 505–559.
- VAN MILLINGEN, J., 2015. Kirkmadrine: stones with a story. *Focus*, 2015, pp. 41–41.
- WELANDER, R.D.E., BREEZE, D.J. and CLANCY, T.O., eds, 2003. *The Stone of Destiny*. Edinburgh: Society of Antiquaries of Scotland.
- WELFARE, A., 2012. *Great Crowns of Stone: The Recumbent Stone Circles of Scotland*. Edinburgh: RCAHMS.
- WHITWORTH, V., 2016 forthcoming. *Bodystones and Guardian Beasts: The Recumbent Grave-Markers of Middle Britain c. 800–1100*. Oxford: Oxford University Press.
- WILL, R.S., FORSYTH, K., CLANCY, T.O. and CHARLES-EDWARDS, G., 2003. An eighth-century inscribed cross-slab in Dull, Perthshire. *Scottish Archaeological Journal*, 25(1), pp. 57–72.
- WILLIAMS, H., 2015. *Hogbacks: the materiality of solid spaces. Early Medieval Stone Monuments. Materiality, Biography, Landscape*. Woodbridge: Boydell & Brewer, pp. 241–268.
- WILLIAMS, H., KIRKTON, J. and GONDEK, M., eds, 2015a. *Early Medieval Stone Monuments. Materiality, Biography, Landscape*. Woodbridge: Boydell & Brewer.
- WILLIAMS, H., KIRKTON, J. and GONDEK, M., 2015b. *Introduction: stones in substance, space and time. Early Medieval Stone Monuments. Materiality, Biography, Landscape*. Woodbridge: Boydell & Brewer, pp. 1–34.
- WILSON, D.M., 2009. Stylistic influences in early Manx sculpture. In: J. GRAHAM-CAMPBELL and M. RYAN, eds, *Anglo-Saxon/Irish Relations Before the Vikings. Proceedings of the British Academy 157*. London: Oxford University Press for the British Academy, pp. 311–328.
- WOOD, I., 2003. Ruthwell: contextual searches. In: C.E. KARKOV and F. ORTON, eds, *Theorizing Anglo-Saxon Stone Sculpture. Medieval European Studies IV*. Morgantown: West Virginia University Press, pp. 104–130.
- WORSLEY, D., NORRIS, S. and MCCOMBE, R., 2015. *Notes on colouring the Ruthwell and Bewcastle Crosses*. Based on research by Darren Worsley, Sarah Norris and Robert McCombe, under the supervision of John Prag, then Keeper of Archaeology at the Manchester Museum, with contributions by Catherine Karkov of Leeds University. Unpublished word document, Manchester Museum. .
- YEOMAN, P., 2005. Proposals for the re-display of the early medieval sculpture collection at Whithorn: the evolution of an interpretative approach. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 325–333.
- YEOMAN, P., 2013. Inside Iona's new museum. *Historic Scotland*, Autumn, pp. 18–21.
- YEOMAN, P., 2013. Reconstructing the first high cross. The Iona Abbey redisplay project. *History Scotland*, 13(4), pp. 8–9.
- YEOMAN, P., 2013. Iona. Exploring Scotland's most sacred space. *Current Archaeology*, July, pp. 32–37.

10.4 Later medieval

The focus here is on funerary monuments. See also architectural sculpture and, for market crosses, public monuments.

- ANON, 2015. Living history on the Isle of Lismore [includes rescue, conservation and display of eight late medieval graveslabs]. *History Scotland*, 15(4), pp. 12–12.
- AOC ARCHAEOLOGY GROUP, *Adding a new dimension to Dundee's medieval carved stones*. Available at <http://www.aocarchaeology.com/dundee-medieval-stones/>.
- BADHAM, S. and OOSTERWIJK, S., eds, 2010. *Monumental Industry. The Production of Tomb Monuments in the Long Fourteenth Century*. Donington: Shaun Tyas.
- BRYCE, T. and CALDWELL, D.H., 1981. Scottish medieval sculpture—the making of reproductions and their uses. *Museums Journal*, 81(2), pp. 67–70.
- BRYCE, T., CALDWELL, D., SKINNER, T. and WELANDER, R., 1981. Replica making—effigies from Houston and a tomb front from Renfrew. *SSCR Newsletter*, 32(March), pp. xx–xx.
- BRYDALL, R., 1895. Monumental effigies of Scotland from the thirteenth to the fifteenth century. *Proceedings of the Society of Antiquaries of Scotland*, 29 (1894–5), pp. 329–410.
- CALDWELL, D.H., EREMIN, K., MILLER, S. and RUCKLEY, N., 2002. West Highland sculpture, Scotland—defining a Gaelic lordship. In: G. HELMIG, B. SCHOLKMANN and M. UNTERMANN, eds, *Centre, Region, Periphery. Medieval Europe Basel 2002*. Hertingen: Folio-Verlag, pp. 84–93.
- CALDWELL, D., KIRK, S., HOWARD, S. and RUCKLEY, N., 2015. Ornsay's sculptural heritage. *History Scotland*, 15(5), pp. 25–28.

- CALDWELL, D.H., MCGIBBON, F.M., MILLER, S. and RUCKLEY, N.A., 2010. The image of a Celtic society: medieval West Highland sculpture. In: P. O'NEILL, ed, *Celts in Legend and Reality. Sydney: Papers from the Sixth Australian Conference of Celtic Studies. Sydney Series in Celtic Studies 9*. Sydney: University of Sydney, pp. 13–59.
- CALDWELL, D., MILLER, S., MCGIBBON, F. and RUCKLEY, N.A., 2006. Geological tools to interpret Scottish medieval carved sculpture; combined petrological and magnetic susceptibility analysis. In: M. MAGETTI and B. MESSAGA, eds, *Geomaterial in Cultural Heritage; Special Publication of the Geological Society of London 257*. London: Geological Society of London, pp. 283–306.
- CAMERON, I., 2005. The Romanesque sculpture of Dunfermline Abbey. In: R. FAWCETT, ed, *Royal Dunfermline*. Edinburgh: Society of Antiquaries of Scotland, pp. 65–78.
- CAPWELL, T.E., 2005. Observations on the armour depicted on three mid-15th-century military effigies in the Kirk of St. Nicholas, Aberdeen. *Journal of the Armour Research Society*, 1, pp. 5–22.
- CARTER, C., 1957. The Arma Christi in Scotland. *Proceedings of the Society of Antiquaries of Scotland*, 90 (1956–7), pp. 116–129.
- CHURCH MONUMENTS SOCIETY, The Church Monuments Society. Available at <http://www.churchmonumentsociety.org/> [Feb/26, 2016].
- CURRENT ARCHAEOLOGY, 2013a. Britain in Archaeology [Edinburgh Blackfriars monastery knight's grave]. *British Archaeology*, 131, pp. 8.
- CURRENT ARCHAEOLOGY, 2013b. Edinburgh: a knight's tale? *Current Archaeology*, 279, pp. 10.
- DONALD, C., 2014. Adding a new dimension to Dundee's medieval carved stones. *Tayside and Fife Archaeological Journal*, 19–20 (2013–14), pp. 67–77.
- DRUMMOND, J., 1881. *Sculptured Monuments in Iona & the Western Highlands*. Edinburgh: Society of Antiquaries of Scotland.
- ENGLISH HERITAGE, Theme: The Heritage of Death. Available at: <https://historicengland.org.uk/images-books/publications/conservation-bulletin-66/>.
- FAWCETT, R., ed, 2005. *Royal Dunfermline*. Edinburgh: Society of Antiquaries of Scotland.
- FAWCETT, R., 2013. Aspects of Scottish canopied tomb design. In: M. PENMAN, ed, *Monuments and Monumentality across Medieval and Early Modern Europe*. Donhead: Shaun Tyas, pp. 129–142.
- FLEMING, D.H., 1931. *St Andrews Cathedral Museum*. Edinburgh: Oliver & Boyd.
- FRASER, I., 2004. In search of the lost royal tombs. *History Scotland*, 4(2), pp. 16–25.
- FRASER, I., 2005. The tomb of the hero king: the death of burial of Robert I, and the discoveries of 1818–19. In: R. FAWCETT, ed, *Royal Dunfermline*. Edinburgh: Society of Antiquaries of Scotland, pp. 155–176.
- FRASER, I., 2013. Medieval funerary monuments in Scotland. In: M. PENMAN, ed, *Monuments and Monumentality across Medieval and Early Modern Europe*. Donhead: Shaun Tyas, pp. 9–17.
- FRASER, I., 2014a. Research in action: the tomb of Robert the Bruce. *Society of Antiquaries of Scotland Newsletter*, 26(2), p. 11.
- FRASER, I., 2014b. Bruce Tomb. *Historic Times*, August, pp. xx–xx.
- FRASER, I., 2015. Robert the Bruce Tomb reconstructed in 3D. *Focus*, 2015, pp. 34–34.
- FRASER, I., forthcoming. The lost tomb of Robert the Bruce. *Proceedings of the Society of Antiquaries of Scotland*.
- GIMSON, G.S., 1995. Lion hunt: a royal tomb-effigy at Arbroath Abbey. *Proceedings of the Society of Antiquaries of Scotland*, 125, pp. 901–916.
- GRAHAM, R.C., 1895. *The Carved Stones of Islay*. Glasgow: James MacLehose & Sons.
- GRAHAM, R.C., 1902. Sculptured stones of Scotland. In: J. PATON, ed, *Scottish History and Life*. Glasgow: James Macle hose and Sons, pp. 34–46.
- GREENHILL, F.A., 1944. Notes on Scottish incised slabs. *Proceedings of the Society of Antiquaries of Scotland*, 78 (1943–4), pp. 80–91.
- GREENHILL, F.A., 1946. Notes on Scottish incised slabs. *Proceedings of the Society of Antiquaries of Scotland*, 80 (1945–6), pp. 43–61.
- GREENHILL, F.A., 1947. Notes on Scottish incised slabs. *Proceedings of the Society of Antiquaries of Scotland*, 81 (1946–7), pp. 99–113.
- GREENHILL, F.A., 1976. *Incised Effigial Slabs. 2 volumes*. London: Faber & Faber Ltd.
- HALL, M.A., 2006. Return of the Bodach. *Clan Donnachaidh Annual 2006*, pp. 13–15.
- HALL, M.A., 2010. Sideways: face-play on the edge of some Scottish pot-querns or A Funny Thing Happened on the Way to the Abbey.... In: P. HARDWICK, ed, *The Playful Middle Ages, Meanings of Play and Plays of Meaning: Essays in Memory of Elaine C. Block*. Turnhout: Brepols, pp. 93–123.
- HAWORTH, L., 2013. Iona stones get makeover. *Focus*, pp. 12–13.

- HENDERSON, G.D.S., 1986. A royal effigy at Arbroath. In: W.M. ORMROD, ed, *England in the Fourteenth-Century: Proceedings of the 1895 Harlaxton Symposium*. Woodbridge: Boydell and Brewer, pp. 88–98.
- HIGGITT, J., 1990. Art and the church before the Reformation. In: W. KAPLAN, ed, *Scotland Creates. 5000 Years of Art and Design*. London: Weidenfeld and Nicolson, pp. 28–44.
- HIGGITT, J., 2003. 'Imagis Maid with Mennis Hand': Saints, Image, Belief and Identity in Later Medieval Scotland. *The Ninth Whithorn Lecture 16th September 2000*. Whithorn: Friends of the Whithorn Trust.
- HISTORIC ENVIRONMENT SCOTLAND, Explore the Collections. Available at <http://collections.historic-scotland.gov.uk/simpleSearch.jsp2015>].
- HISTORIC SCOTLAND, 2013. The Mariota Stone returns [graveslab from Kilvikeon]. *Focus*, pp. 9.
- HOLMES, S.M., 2013. 'Defyle not Chrysts Kirk with your carrion': William Durandus (c.1230–96), medieval burial and two tombs in Rome and Fife. In: M. PENMAN, ed, *Monuments and Monumentality across Medieval and Early Modern Europe*. Donhead: Shaun Tyas, pp. 212–223.
- HOLMES, S.M., 2015. *Sacred Signs in Reformation Scotland: Interpreting Worship, 1488–1590*. Oxford: Oxford University Press.
- HUTCHESON, A., 1896. Notice of an early inscribed mural monument and of an undescribed sculptured stone preserved in the Parish Church of Tealing, Forfarshire. *Proceedings of the Society of Antiquaries of Scotland*, 30 (1895–96), pp. 41–48.
- KILMARTIN MUSEUM, Kilmartin Museum. Available at <http://www.kilmartin.org/>.
- LACAILLE, A.D., 1925. Some ancient crosses in Dunbartonshire and adjoining counties. *Proceedings of the Society of Antiquaries of Scotland*, 59 (1924–5), pp. 143–154.
- LAING, D., 1856. On the present state of the ruins of Iona, and their preservation. In a letter to the Hon Lord Murray. *Proceedings of the Society of Antiquaries of Scotland*, 2 (1855–6), pp. 7–12.
- LANKESTER, P. and SCOTT, M., 1981. An interim list of Scottish 'Lowland' effigies down to 1560. *Glasgow Archaeological Society Bulletin*, 12(Autumn), pp. 3–10.
- MACPHERSON, A., 1890. Scottish sacrament houses. *Proceedings of the Society of Antiquaries of Scotland*, 25 (1890–91), pp. 89–116.
- MAIR, C., 1988. *Mercat Cross and Tolbooth: Understanding Scotland's Old Burghs*. Edinburgh: John Donald Publishers Ltd.
- MÁRKUS, M., 2004. St Bride's, Douglas—a family mausoleum. *Proceedings of the Society of Antiquaries of Scotland*, 134, pp. 403–421.
- MCCULLOCH, W.T., 1857. Notices of the City Cross of Edinburgh, &c, illustrated by a model and drawings of the existing remains. *Proceedings of the Society of Antiquaries of Scotland*, 2 (1854–7), pp. 287–294.
- MCRROBERTS, D., 1962. Material destruction caused by the Scottish Reformation, 1513–1625. In: D. MCRROBERTS, ed, *Essays on the Scottish Reformation*. Glasgow: John S Burns, pp. 415–462.
- MELVILLE, N.H.T., 2000. *The incised effigial stone at Foveran, Aberdeenshire*. Accessible at http://jwma.ejmas.com/articles/2000/melville/melville_2.htm>. *Journal of Western Martial Art*, January.
- NORMAN, A.V.B., 1963. A Scottish military effigy of the 15th century. *Scottish Art Review*, special no, *Scottish Weapons*, 9(1), pp. 24, 34–25, 35.
- ORAM, R., 2009. The medieval bishops of Whithorn, their cathedral and their tombs. In: C. LOWE, ed, 'Clothing for the soul divine': Burials at the Tomb of St Ninian. Excavations at Whithorn Priory, 1957–67. *Historic Scotland Archaeology Report no.3*. Edinburgh: Historic Scotland, pp. 131–165.
- ORAM, R.D., 2013. Bishop's tombs in medieval Scotland. In: M. PENMAN, ed, *Monuments and Monumentality across Medieval and Early Modern Europe*. Donhead: Shaun Tyas, pp. 171–198.
- PENMAN, M., ed, 2013a. *Monuments and Monumentality across Medieval and Early Modern Europe*. Donington: Shaun Tyas.
- PENMAN, M., 2013b. A programme for royal tombs in Scotland? A review of the evidence, c.1093–c.1542. In: M. PENMAN, ed, *Monuments and Monumentality across Medieval and Early Modern Europe*. Donhead: Shaun Tyas, pp. 239–253.
- PENMAN, M., 2013c. Monuments and monumentality across medieval and early modern Europe. In: M. PENMAN, ed, *Monuments and Monumentality across Medieval and Early Modern Europe*. Donhead: Shaun Tyas, pp. 1–8.
- PULLIAM, H., 2015. Tracing the Celts? Survival and transformation, c. AD 800–1600. In: J. FARLEY and F. HUNTER, eds, *Celts: Art and Identity*. London: The British Museum/National Museums Scotland, pp. 206–233.
- RICHARDSON, J.S., 1928. Fragments of altar retables of late medieval date in Scotland. *Proceedings of the Society of Antiquaries of Scotland*, 62 (1927–8), pp. 197–224.
- RICHARDSON, J.S., 1964. *The Medieval Stone Carver in Scotland*. Edinburgh: Edinburgh University Press.
- SCOTT, M.C., 1987. *Dress in Scotland, 1406–60*. PhD edn.

- Courtauld Institute of Art, University of London.
- SCOTTISH EXECUTIVE, 2005. *Carved Stones. Scottish Executive Policy and Guidance*. Edinburgh: Historic Scotland.
- SCOTT-MONCRIEFF, G., 1938. *The Stones of Scotland*. London: B T Batsford Ltd.
- SMALL, J.W., 1900. *Scottish Market Crosses*. Stirling: E Mackay.
- STEER, K.A. and BANNERMAN, J.W.M., 1977. *Late Medieval Monumental Sculpture in the West Highlands*. Edinburgh: RCAHMS.
- THOMSON, G., 2013. Contextualisation and typology of disc-headed and trapezoidal gravemarker forms in Scotland. *Scottish Archaeological Journal*, 34–5 (2012–13), pp. 1–24.
- THOMSON, L.J., 2000. *Scottish market crosses: the development of a risk assessment model*. Available at <http://hdl.handle.net/10059/596>. PhD edn. Aberdeen: Robert Gordon University.
- THOMSON, L.J., 2004. The Scottish Mercat Cross. An historic burgh icon. *History Scotland*, 4(6), pp. 25–34.
- VAN MILLINGEN, J., 2014. Setting great store for Scotland's stones [improved storage facilities for medieval stones across HS estate]. *Focus*, pp. 13.
- VARIOUS, *Pevsner Architectural Guides: The Buildings of Scotland series*. Yale University Press.
- WALKER, J.R., 1883. Holy wells in Scotland. *Proceedings of the Society of Antiquaries of Scotland*, 17 (1882–3), pp. 152–210.
- WALKER, J.R., 1887. Scottish baptismal fonts. *Proceedings of the Society of Antiquaries of Scotland*, 21 (1886–7), pp. 346–448.
- WEEVER, J., 1631. *Ancient Funerall Monuments With in the United Monarchie of Great Britaine, Ireland and the Islands Adjacent ...* London.
- YEOMAN, P., 2013. Inside Iona's new museum. *Historic Scotland*, Autumn, pp. 18–21.
- AL-SADIE, A., 2016. Falkland Palace stonework. *History Scotland*, 16(3), pp. 38–38.
- AOC ARCHAEOLOGY GROUP, *Adding a new dimension to Dundee's medieval carved stones*. Available at <http://www.aocarchaeology.com/dundee-medieval-stones/2014>].
- BILLINGS, R.W., 1845–52. *Baronial and Ecclesiastical Antiquities of Scotland*, 4 vols. Edinburgh: William Blackwood and Sons.
- BROWN, M., 2012. *Scotland's Lost Gardens: From the Garden of Eden to the Stewart Palaces*. Edinburgh: RCAHMS.
- BRYCE, I.B.D. and ROBERTS, A., 1993. Post-Reformation Catholic houses of north-east Scotland. *Proceedings of the Society of Antiquaries of Scotland*, 123, pp. 363–372.
- CAMERON, I., 2005. The Romanesque sculpture of Dunfermline Abbey. In: R. FAWCETT, ed, *Royal Dunfermline*. Edinburgh: Society of Antiquaries of Scotland, pp. 65–78.
- COWAN, D., *Sundials of Scotland*. Available at <http://www.sundialsofscotland.co.uk/> [Apr/12, 2016].
- COX, A. and PERRY, D., 2005. Sculptured stones in Balgay Park, Dundee. *Tayside and Fife Archaeological Journal*, 11, pp. 100–102.
- CYARK, *Rosslyn Chapel*. Available at <http://archive.cyark.org/rosslyn-chapel-intro> [April/04, 2016].
- DRAKE, C.S., 2002. *The Romanesque Fonts of Northern Europe and Scandinavia*. Woodbridge: The Boydell Press.
- DRANSART, P. and BOGDAN, N.Q., 2004. The material culture of resucancy at Fetternear: kin and religion in post-Reformation Scotland. *Proceedings of the Society of Antiquaries of Scotland*, 134, pp. 457–470.
- DUNBAR, J.G., 1976. The organisation of the building industry in Scotland during the seventeenth century. In: J.G. DUNBAR, ed, *Building Construction in Scotland: Some Historical and Regional Aspects*. Edinburgh and Dundee: Scottish Vernacular Buildings Working Group, pp. 7–15.
- DUNBAR, J.G., 1999. *Scottish Royal Palaces. The Architecture of the Royal Residences during the Late Medieval and Early Renaissance Periods*. East Linton: Tuckwell Press Ltd/Historic Scotland.
- FAWCETT, R., 2001. *Elgin Cathedral*. Edinburgh: Historic Scotland.
- FAWCETT, R., 2002. *Scottish Medieval Churches. Architecture and Furnishings*. Stroud: Tempus.
- FAWCETT, R., ed, 2005. *Royal Dunfermline*. Edinburgh: Society of Antiquaries of Scotland.
- FAWCETT, R., 2011. *The Architecture of the Scottish Medieval*

10.5 Architectural

With literature on Scottish architecture being so much wider than carved stones associated with buildings, we focus here on a number of useful introductory texts to relevant Scottish architecture and some publications that specifically relate to carved stones.

Corpus of Romanesque Sculpture in Britain and Ireland. Available at <http://www.crsbi.ac.uk/>.

ALLEN, J.R., 1887. *Norman Sculpture and the Medieval Bestiaries from the Rhind Lectures in Archaeology for 1885*. London: Whiting & Co.

- Church 1100–1560*. New Haven and New York: Yale University Press.
- FAWCETT, R., 2014. Structural and architectural stone. In: R. CRAMP, ed, *The Hirsell Excavations. Society for Medieval Archaeology Monograph 36*. Leeds: Society for Medieval Archaeology, pp. 185–198.
- FAWCETT, R., ORAM, R. and LUXFORD, J., 2010. Scottish medieval parish churches: the evidence from the dioceses of Dunblane and Dunkeld. *Antiquaries Journal*, 90, pp. 261–298.
- FLEMING, D.H., 1931. *St Andrews Cathedral Museum*. Edinburgh: Oliver & Boyd.
- FRASER, S.M., 2015. “To receive guests with kindness”: Symbols of hospitality, nobility and diplomacy in Alexander Seton’s designed landscape at Fyvie Castle. *Architectural Heritage*, 26, pp. 121–140.
- GERDWILKER, C. and YOUNG, M., 2014. Skelmorlie Aisle: a ‘whodunnit’ of stone conservation’. *Focus*, pp. 22–23.
- GLENDINNING, M., MACINNES, R. and MACKECHNIE, A., eds, 1996. *A History of Scottish Architecture. From the Renaissance to the Present Day*. Edinburgh: Edinburgh University Press.
- GRAHAM, R.C., 1902. Sculptured stones of Scotland. In: J. PATON, ed, *Scottish History and Life*. Glasgow: James Maclehose and Sons, pp. 34–46.
- GRANT, J., 1881. *Cassell’s Old and New Edinburgh*. Original Manuscript: NLS: MS 293. 1st edn. London: Cassell, Petter, Galpin.
- HARRISON, J.G., 2011. *Rebirth of a Palace. The Royal Court at Stirling Castle*. Edinburgh: Historic Scotland.
- HAY, G., 1957. *The Architecture of Scottish Post-Reformation Churches 1560–1843*. Oxford: Clarendon Press.
- HISTORIC ENVIRONMENT SCOTLAND, Explore the Collections. Available at <http://collections.historic-scotland.gov.uk/simpleSearch.jsp2015>.
- INSH, F., 2014. An aspirational era? Examining and defining Scottish visual culture 1620–1707. Available at <http://ethos.bl.uk/OrderDetails.do?uin=uk.bl.ethos.646090>. PhD edn. University of Aberdeen.
- LAINING, D., 1856. On the present state of the ruins of Iona, and their preservation. In a letter to the Hon Lord Murray. *Proceedings of the Society of Antiquaries of Scotland*, 2 (1855–6), pp. 7–12.
- MACGIBBON, D. and ROSS, T., 1887–92. *Castellated and Domestic Architecture of Scotland from the Twelfth to the Eighteenth Century*, 5 vols. Edinburgh: David Douglas.
- MACGIBBON, D. and ROSS, T., 1896–97. *The Ecclesiastical Architecture of Scotland, from the Earliest Christian Times to the Seventeenth Century*. 3 vols. Edinburgh: D Douglas.
- MÁRKUS, M., 2003. Historic Scotland *ex situ* carved and moulded stones project. *Discovery and Excavation in Scotland*, 4, pp. 7–10.
- MCKEAN, C., 2001. *The Scottish Chateau: The Country House of Renaissance Scotland*. Stroud: Sutton Publishing Ltd.
- MCCROBERT, D. and HOLMES, S.M., 2012. *Lost Interiors. The Furnishings of Scottish Churches in the Later Middle Ages. The Rhind Lectures 1969–1970*. Edinburgh: The Aquhorthies Press.
- MCCROBERTS, D., 1965. Scottish sacrament houses. *Transactions of the Scottish Ecclesiological Society*, 15(3), pp. 33–56.
- MUIR, T.L.S., 1861. *Characteristics of Old Church Architecture Etc. in the Mainland and Western Islands of Scotland*. London: London.
- MURRAY, A., 2015. St Giles’ reveals a colourful past [painted decoration on architectural sculpture]. *Focus*, 2015, pp. 39–39.
- OWEN, K. and FLEMING, F., 2016. The two towers: return of the stones [Elgin Cathedral carved stone collection display]. *History Scotland*, 16(2), pp. 46–47.
- RICHARDSON, J.S., 1928. Fragments of altar retables of late medieval date in Scotland. *Proceedings of the Society of Antiquaries of Scotland*, 62 (1927–8), pp. 197–224.
- RICHARDSON, J.S., 1964. *The Medieval Stone Carver in Scotland*. Edinburgh: Edinburgh University Press.
- ROSS, T., 1890. The ancient sundials of Scotland. *Proceedings of the Society of Antiquaries of Scotland*, 24 (1889–90), pp. 161–273.
- SAGROTT, S., 2015. 3D recording % visualisation of the Falkland Palace roundels. Available at <http://www.archaeologists.net/sites/default/files/SG%20CIFA%20Newsletter%20August%202015.pdf>. *CIFA Scottish Group Newsletter*, August, pp. 5–6.
- SAGROTT, S., 24 July 2015, 2015-last update, *New light on old stone: 3D recording & visualisation of the Falkland Palace roundels* [Homepage of Day of Archaeology], [Online]. Available at <http://www.dayofarchaeology.com/heritage-data-and-the-national-trust-for-scotland/#more-20190> [Apr/18, 2016].
- SAGROTT, S., 12 July 2015, 2015-last update, *New Light on Old Stone: Falkland Palace* [Homepage of British Archaeology News Resource], [Online]. Available at <http://www.bajrfed.co.uk/bajrpress/new-light-on-old-stone-falkland-palace/> [Apr/18, 2016].
- SCOTTISH EXECUTIVE, 2005. *Carved Stones. Scottish Executive Policy and Guidance*. Edinburgh: Historic Scotland.

- SCOTT-MONCRIEFF, G., 1938. *The Stones of Scotland*. London: B T Batsford Ltd.
- SOMERVILLE, A.R., 1987. The ancient sundials of Scotland. *Proceedings of the Society of Antiquaries of Scotland*, 117, pp. 233–264.
- SOMERVILLE, A.R., 1990. The Ancient Sundials of Scotland. London: Rogers Turner. STONEMASONS MARKS RESEARCH PROJECT, Stonemasons Marks Research Project. Available at <https://www.facebook.com/groups/1683868745175644/> [Mar/14, 2016].
- THE MASONS' MARK PROJECT, *The Mason's Mark Project*. Available at <http://www.masonsmarkproject.org.uk/> [April/17, 2016].
- THOMSON, L.J., 2000. *Scottish market crosses: the development of a risk assessment model*. Available at <http://hdl.handle.net/10059/596>. PhD edn. Aberdeen: Robert Gordon University.
- WALKER, J.R., 1888. *Pre-Reformation Churches in Fife and the Lothians*. Edinburgh: Mould & Tod.
- WALKER, R. and FLEMING, F., 2016. The two towers: return of the stones. *Focus*, pp. 40–41.
- 10.6 Graveyards**
- ABERDEENSHIRE COUNCIL, *Aberdeenshire Historic Kirkyards*. Available at <https://www.aberdeenshire.gov.uk/leisure-sport-and-culture/archaeology/projects/historic-kirkyards/> [April/04, 2016].
- ANON, 2015. Living history on the Isle of Lismore [includes rescue, conservation and display of eight late medieval graveslabs]. *History Scotland*, 15(4), pp. 12–12.
- ARCHAEOLOGY SCOTLAND, 2010-last update, *Scottish Graveyards [Carved Stones Advisor Project]*. Available at <http://www.scottishgraveyards.org.uk> [July/21, 2015].
- BATH, M. and WILLISHER, B., 1996. Emblems from Quarles on Scottish gravestones. In: A. ADAMS and L. GOVE, eds, *Emblems and Art History: 9 Essays*, vol. 1. Glasgow: Glasgow Emblem Studies, pp. 169–201.
- BELL, G., 2002. The management challenges of caring for graveyards: issues of health and safety. In: A. DAKIN, ed, *Conservation of Historic Graveyards*. Edinburgh: Historic Scotland, pp. 29–32.
- BEVERIDGE, E., 1893. *The Churchyard Memorials of Crail. Containing a Full Description of the Epitaphs Anterior to 1800: Together With Some Account of the Other Antiquities of the Burgh*. repr. 2010 edn. privately printed (repr. British Library/Amazon).
- BOYLE, A., DICKSON, C., MCEWAN, A. and MACLEAN, C., 1985. *Ruins and Remains. Edinburgh's Neglected Heritage*. Edinburgh: Scotland's Cultural Heritage, University of Edinburgh.
- BRIEN, O., 2011. *Guidance for the Care, Conservation and Recording of Historic Graveyards*. Available at http://www.heritagecouncil.ie/fileadmin/user_upload/Publications/Archaeology/Guidance_Historic_Graveyards.pdf. 2nd edn. Kilkenny: The Heritage Council of Ireland.
- BROWN, I.G., 1991. David Hume's tomb: A Roman mausoleum by Robert Adam. *Proceedings of the Society of Antiquaries of Scotland*, 121, pp. 321–422.
- BUCKHAM, S., 2002. The Carved Stones Adviser Project: new initiatives in the recording and conservation of historic graveyards. In: A. DAKIN, ed, *Conservation of Historic Graveyards*. Edinburgh: Historic Scotland, pp. 59–67.
- BUCKHAM, S., 2004. *Sources of Financial Assistance for the Conservation of Scotland's Historic Graveyards*. Available at <http://conservation.historic-scotland.gov.uk/conservationofgraveyards.pdf>. Edinburgh: Historic Scotland. Research Report.
- BUCKHAM, S., 2006. *Analysis of the Carved Stones Adviser Project Graveyard Recording Forms. Final Report April 2006, unpublished report for Council for Scottish Archaeology*, Edinburgh. .
- BUCKHAM, S., 2011. 'Not architects of decay': the influence of cemetery management on cemetery landscapes. *Context*, March, pp. 32–34.
- BUCKHAM, S., 2013a. *The Edinburgh Graveyards Project. A Scoping Study to Identify Strategic Priorities for the Future Care and Enjoyment of Five Burial Grounds in the Heart of the Edinburgh World Heritage Site*. Available at http://www.wmf.org/sites/default/files/wmf_publication/Edinburgh%20Graveyards%20Project.pdf. New York: World Monuments Fund.
- BUCKHAM, S., 2013b. *Conservation Strategy for Historic Graveyards in the Clyde and Avon Valley Landscape. Unpublished report for the Clyde and Avon Valley Landscape Partnership*.
- BUCKHAM, S., 2014. Edinburgh Graveyards Project. *Archaeology Scotland*, 21(Winter), pp. 15–17.
- BUCKHAM, S., 2015a. Graveyards. In: CULTURE & SPORT GLASGOW (MUSEUMS), ed, *Exploring our Past. Essays on the Local History and Archaeology of West Central Scotland*. Available at http://www.glasgowlife.org.uk/museums/about-glasgow-museums/publications/online-publications/Documents/H_Graveyards.pdf. Glasgow: Glasgow Museums, pp. 207–216.
- BUCKHAM, S., 2015b. *Govan Old Churchyard Conservation Management Plan. Unpublished report edn*. Glasgow: Friends of Govan Old.

- BUCKHAM, S., 2016. 'Not architects of decay': the influence of graveyard management on Scottish burial landscapes. In: S. BUCKHAM, P.C. JUPP and J. RUGG, eds, *Death in Modern Scotland, 1855–1955 Beliefs, Attitudes and Practices. Studies in the History and Culture of Scotland—Volume 6*. Oxford: Peter Lang, pp. 215–240.
- BUCKHAM, S., nd. *An Introduction to Graveyard Recording*. Edinburgh: Council for Scottish Archaeology.
- BUCKHAM, S. and DAKIN, A., 2007. *Scotland's Historic Graveyards Project Audience Development Plan, unpublished report for Archaeology Scotland*.
- BUCKHAM, S. and FISHER, F., 2013. *Conservation Strategy for Historic Graveyards in the Clyde and Avon Valley Landscape. Unpublished report for the Clyde and Avon Valley Landscape Partnership*.
- BUCKHAM, S., JUPP, P.C. and RUGG, J., eds, 2016. *Death in Modern Scotland, 1855–1955 Beliefs, Attitudes and Practices. Studies in the History and Culture of Scotland—Volume 6*. Oxford: Peter Lang.
- BUCKHAM, S. and LLOYD, K., 2013-last update, *Kirkyard heritage: graveyard conservation in Scotland*. Available at <http://www.buildingconservation.com/articles/kirkyard-heritage/kirkyard-heritage.htm> [June/16, 2015].
- BURNETT, A., 2012. Dead interesting. [A tour of interesting historic graveyards in Scotland]. *Historic Scotland*, Winter, pp. 22–26.
- CABE [COMMISSION FOR ARCHITECTURE AND THE BUILT ENVIRONMENT], 2007-last update, *Briefing. Cemeteries, churchyards and burial grounds*. Available at <http://webarchive.nationalarchives.gov.uk/20110118095356/http://www.cabe.org.uk/files/cemeteries-churchyards-and-burial-grounds.pdf>.
- CARLUKE PARISH HISTORICAL SOCIETY, 2005. *The Forest Kirk and its Graveyard: Stories behind the Stones*. Carluke: Carluke Parish Historical Society.
- CHERRYSON, A., CROSSLAND, Z. and TARLOW, S., eds, 2012. *A Fine and Private Place: The Archaeology of Death and Burial in Post-Medieval Britain and Ireland*. University of Leicester: Leicester.
- CRUIKSHANK, J., 1941. *Logan's Collections [important nineteenth-century record of funeral monuments in and around Aberdeen]*. Aberdeen: Spalding Club.
- CULTURE & SPORT GLASGOW (MUSEUMS), ed, 2015. *Exploring our Past. Essays on the Local History and Archaeology of West Central Scotland*. Glasgow: Glasgow Museums.
- CUTMORE, C., 1996. *Memorial stones in the kirkyard at Govan: a study of the early modern monuments and the interplay with the re-used early medieval "Govan Stones"*. MA edn. Department of Archaeology, University of Glasgow.
- DAKIN, A., 2002. *Conservation of Historic Graveyards*. Edinburgh: Historic Scotland.
- DAVIDSON, F., 1977. *Seventeenth Century Tombstones of Angus and the Mearns: An Inventory*, Not stated: Angus District Council Libraries & Museums.
- DAVIES, D. and SHAW, A., 1995. *Reusing Old Graves: A Report on Popular British Attitudes*. Crayford: Shaw and Sons.
- DONALDSON, G., 1987. The Dunbar Monument in its historical setting. In: EAST LOTHIAN ANTIQUARIAN & FIELD NATURALISTS' SOCIETY, ed, *Dunbar Parish Church 1342–1987*. Not stated: East Lothian Antiquarian & Field Naturalists' Society, pp. 1–16.
- DOWNES, J. and POLLARD, T., eds, 1999. *The Loved Body's Corruption*. Glasgow: Cruithne Press.
- EACHTRA, *Historic Graves. Explore, Protect, Promote*. Available at <http://historicgraves.com/>.
- EDINBURGH WORLD HERITAGE, *Edinburgh Graveyards Project*. Available at <http://www.ewht.org.uk/looking-after-our-heritage/edinburgh-graveyards-project>.
- EDINBURGH WORLD HERITAGE, *New heritage trails for Edinburgh's historic graveyards*. Available at <http://www.ewht.org.uk/news/504/102/> [Dec/6, 2015].
- ENGLISH HERITAGE, *Theme: The Heritage of Death*. Available at: <https://historicengland.org.uk/images-books/publications/conservation-bulletin-66/>.
- ENGLISH HERITAGE (VARIOUS AUTHORS), *Protecting their memory. Conservation Bulletin. The Heritage of Death, 66* (Summer 2011), pp. 23–41.
- EYERS, D., 2015-last update, *Tombs of the Dundee Howff*. Available at <http://www.dundee-howff.info/> [04/10, 2015].
- FARRELL, S., 2001. Fife gravestones: a personal view. *Tayside and Fife Archaeological Journal*, 7, pp. 129–132.
- FERGUSON, L.M., 1999. Recording graveyards. In: RCAHMS, ed, *Monuments on Record Annual Review 1998–9*. Edinburgh: RCAHMS, pp. 47–49.
- FERGUSON, L.M., 2002. Record-taking and record-keeping for graveyards. In: A. DAKIN, ed, *Conservation of Historic Graveyards*. Edinburgh: Historic Scotland, pp. 22–26.
- FISHER, F., 2012. News—The body snatchers of East Perthshire [Ph 1 of Historic Churchyards Project]. *Historic Scotland*, (12.1), pp. 7.
- FLEMING, D.H., 1931. *St Andrews Cathedral Museum*. Edinburgh: Oliver & Boyd.
- FOSTER, S.M. and JONES, S., 2008. Recovering the biography of the Hilton of Cadboll cross-slab. In: H. JAMES, I. HENDERSON, S.M. FOSTER and S. JONES, eds, *A Fragmented Masterpiece. Recovering the Biography of the Hilton of Cadboll Pictish Cross-Slab*. Edinburgh:

- Society of Antiquaries of Scotland, pp. 205–284.
- FURNESS, S. and JACKSON, F., 2015. Unravelling the origins of an enigmatic gravestone [Ballyhennan graveyard, Argyll and Bute]. *History Scotland*, 15(4), pp. 10–11.
- GRAHAM, A., 1958. Headstones in post-Reformation Scotland. *Proceedings of the Society of Antiquaries of Scotland*, 91 (1957–8), pp. 1–9.
- GRAHAM, R.C., 1902. Sculptured stones of Scotland. In: J. PATON, ed, *Scottish History and Life*. Glasgow: James Maclehose and Sons, pp. 34–46.
- GULLANE AND DIRLETON HISTORY SOCIETY, 2009. *Life and Death in Dirleton Parish. A Social History Derived From Kirkyard Memorials*. Dirleton: Gullane and Dirleton History Society.
- HARTE, J., 1996. How old is that old yew? *At the Edge*, 4, pp. 1–9.
- HERITAGE COUNCIL, 2011-last update, *Guidance for the Care, Conservation and Recording of Historic Graveyards*. Available at http://www.heritagecouncil.ie/fileadmin/user_upload/Publications/Archaeology/Guidance_Historic_Graveyards.pdf.
- HISTORIC ENVIRONMENT SCOTLAND, Explore the Collections. Available at <http://collections.historic-scotland.gov.uk/simpleSearch.jsp>.
- HISTORIC SCOTLAND, Graveyards. Available at <http://conservation.historic-scotland.gov.uk/graveyards>.
- HISTORIC SCOTLAND, Graveyards and Gravestones. Available at <http://www.historic-scotland.gov.uk/index/heritage/valuingourheritage/carvedstones/graveyards-and-gravestones.htm>.
- HISTORIC SCOTLAND, 2003. *Emergency Measures for Historic Memorials. A Short Guide for Cemetery Managers*. Edinburgh: Historic Scotland.
- HISTORIC SCOTLAND, 2013. The Mariota Stone returns [graveslab from Kilvikeon]. *Focus*, pp. 9.
- HOWARD, D., 1996. The Kinnoull Aisle and Monument. *Architectural History*, 39, pp. 36–53.
- JERVISE, A., 1875–79. *Epitaphs & Inscriptions from Burial Grounds & Old Buildings in the North-East of Scotland*, 2 vols. Edinburgh: Edmondston and Douglas.
- JOHNSTON, R., 2015. 60-second interview. Ruth Johnston, Chair of Friends of Glasgow Necropolis. *Archaeology Scotland*, 22(Spring), pp. 26–27.
- LLEWELLYN, N., 2000. *Funeral Monuments in Post-Reformation England*. Cambridge: Cambridge University Press.
- LOGIE OLD GRAVEYARD GROUP, nd-last update, Logie Old Graveyard Group. Available at <http://www.logieogg.com/> [July/23, 2015].
- LOVE, D., 1989 repr. 2010. *Scottish Kirkyards*. Stroud: Amberley.
- MACDONALD, G., 1936. Post-Reformation tombstones in the cathedral churchyard, St Andrews. *Proceedings of the Society of Antiquaries of Scotland*, 70 (1935–6), pp. 40–119.
- MACKECHNIE, A., 2008. Càrn air a' Mhonadh: Gaeldom's monuments—cairns, crosses and celticism. *Journal of the Scottish Society for Art History*, 13 (2008–09), pp. 22–32.
- MACLEAN, H., 2014. *Gilding the Thistle: the amplification of Scottish identity in Australian cemeteries. Paper presented at Death in Scotland, from the Medieval to the Modern: Beliefs, Attitudes and Practices conference 2 February 2014*. Abstract available at <<https://uq.academia.edu/HildaMaclean>>.
- MAXWELL, I., NANDA, R. and URQUHART, D., 2001. *Conservation of Historic Graveyards. Guide for Practitioners 2*. Edinburgh: Historic Scotland.
- MCALISTER, K., 2014. Old Logie Kirk and Kirkyard [restoration project]. *History Scotland*, 14(2), pp. 11.
- MCFARLAND, E., 2004. Researching death, mourning and commemoration in early modern Scotland. *Journal of Historical Studies*, 24(1), pp. 20–44.
- MINISTRY OF JUSTICE, 2009. *Managing the Safety of Burial Ground Memorials: Practical Advice for Dealing with Unstable Memorials*. Available at <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/326725/safety-burial-grounds.pdf>. Not stated: Ministry of Justice.
- MONTEITH, R., 1704. *An Theater of Mortality: or, the Illustrious Inscriptions Extant upon the Several Monuments .. within the Gray-Friars church-yard ..* Edinburgh: Heirs and Successors of Andrew Anderson.
- MORAY BURIAL GROUND RESEARCH GROUP, Moray Burial Ground Research Group. Available at <http://www.mbrg.org/>.
- MYTUM, H., 2000. *Recording and Analysing Graveyards*. York: Council for British Archaeology.
- MYTUM, H., 2004. *Mortuary Monuments and Burial Grounds of the Historic Period*. New York, Boston, Dordrecht, London, Moscow: Kluwer Academic/Plenum Publishers.
- MYTUM, H., 2009. Mortality symbols in action: Protestant and Catholic early 18th century West Ulster. *Historical Archaeology*, 43(1), pp. 160–182.
- MYTUM, H., CAMERON, J. and CHAPMAN, K., 2015. *Developing Local Assessment Toolkits—A Scoping Study to Look at Developing a Standard Model for Recording Cemeteries and Burial Grounds*. Unpublished report for English Heritage. Available at <http://historicengland.org>.

- uk/images-books/publications/developing-local-assessment-toolkits-developing-standard-model-for-recording-cemeteries-and-burial-grounds/. English Heritage.
- NATIONAL TRUST OF AUSTRALIA (NEW SOUTH WALES), 2009. *Guidelines for Cemetery Conservation*. Available at http://www.nationaltrust.org.au/assets/9719/1/cemetery_conservation_guide.pdf. 2nd edn. National Trust of Australia.
- NICHOLS, K., 2014. Saving the Dundee Howff. *History Scotland*, 14(5), pp. 28–29.
- ODGERS, D., 2011. *Caring for Historic Graveyard and Cemetery Monuments*. Available at <http://www.helm.org.uk/guidance-library/caring-historic-graveyard-cemetery-monuments/>. English Heritage.
- PERTH AND KINROSS HERITAGE TRUST, *Historic Churchyards*. Available at <http://www.pkht.org.uk/index.php/projects/carpow-logboat1/2016>].
- PERTH AND KINROSS HERITAGE TRUST, *Historic Churchyards—a gateway to the past*. Available at <http://www.pkht.org.uk/historic-churchyards.php>.
- PICKIN, J., 2015–2016-last update, *Old Portpatrick Church and Churchyard*. Available at <http://www.portpatrickchurchyard.org.uk/> [Jan/15, 2016].
- PROUDFOOT, E., 1998. St Andrews Cathedral graveyard survey. *Tayside and Fife Archaeological Journal*, 1, pp. 248–259.
- PUBLIC MONUMENTS AND SCULPTURE ASSOCIATION, Public Monuments and Sculpture Association. Available at <http://www.pmsa.org.uk/>.
- RAEBURN, G.D., 2012. *The long reformation of the dead in Scotland*. PhD edn. University of Durham.
- RAY, J., RUGG, J., RUTHERFORD, S., LOE, L., HIND, J. and SPANDL, K., 2014. *Cemeteries, Churchyards and Burial Grounds: Devising and Applying a Significance Framework*. Unpublished report for English Heritage. Available at <https://historicengland.org.uk/images-books/publications/cemeteries-churchyards-and-burial-grounds-significance-framework/>. Oxford Archaeology.
- REINHARDT, R., 2012. *Angels of Scotland. Historic Scottish Cemeteries*. Not stated: Blurb.
- ROGER, J.C., 1871. *Monuments and Monumental Inscriptions in Scotland*. London: Grampian Club.
- RUGG, J., 2000. Defining the place of burial: what makes a cemetery a cemetery? *Mortality*, 5(3), pp. 259–273.
- SAFHS, The Scottish Association of Family History Societies. Available at <http://www.safhs.org.uk/> [Feb/22, 2016].
- SCOTLAND: NATIONAL RURAL NETWORK, 2010-last update, Logie Old Graveyard Group. Available at <https://www.ruralgateway.org.uk/en/node/1769> [July/23, 2015].
- SCOTT, R., 2005. *The cemetery and the city: the origins of Glasgow Necropolis, 1825–1857*. PhD edn. Department of History (Scottish History), University of Glasgow.
- SCOTTISH EXECUTIVE, 2005. *Carved Stones. Scottish Executive Policy and Guidance*. Edinburgh: Historic Scotland.
- SCOTTISH MONUMENTAL INSCRIPTIONS, *Scottish Monumental Inscriptions*. Available at <https://www.scottish-monumental-inscriptions.com/> [Feb/22, 2016].
- SCOTT-MONCRIEFF, G., 1938. *The Stones of Scotland*. London: B T Batsford Ltd.
- SELLEVOLD, B.J. and HOMMEDAL, A.T., 2008. Archaeological bones—the anatomy of an abandoned churchyard. *Norwegian Archaeological Review*, 41(1), pp. 71–84.
- SHERLOCK, P., 2008. *Monuments and Memory in Early Modern England*. Aldershot: Ashgate.
- SPICER, A., 2000. *Defyle not Christ's Kirk with your carrion: the development of burial aisles in Post-Reformation Scotland*. In: B.
- GORDON and P. MARSHALL, eds, *The Place of the Dead: Death and Remembrance in Late Medieval and Early Modern Europe*. Cambridge: Cambridge University Press, pp. 149–169.
- SUAT, 1991. *Kinnoull: A History of the Parish Cemetery*. Perth: SUAT.
- SUAT, 1999. *National Assessment of Gravestones and Graveyards. Unpublished report for TCRE, Historic Scotland*. Perth: SUAT.
- TARLOW, S., 1999. *Bereavement and Commemoration. An Archaeology of Mortality*. Oxford: Blackwell Publishers Ltd.
- TARLOW, S., 2000. Landscapes of memory: the nineteenth-century garden cemetery. *European Journal of Archaeology*, 3(2), pp. 217–239.
- TARLOW, S., 2010. *Ritual, Belief and the Dead in Early Modern Britain and Ireland*. Cambridge: Cambridge University Press.
- TAYLOR, C., 1903. The Quakers of Glasgow and their burial grounds. *Transactions of the Glasgow Archaeological Society*, 5, pp. 96–112.
- TAYLOR, M.C. and LAMMERTS, D.C., *Grave Matters*. London: Reaktion Books.
- THOMSON, G., 2001. Old wine in new bottles. 'New technology' in historical research: a case study. *The Vallum*, 2, pp. 1–8.
- THOMSON, G., 2001. Research in inscripational palaeography

- (RIP). Scottish tombstone lettering 1241–1855: methodology and preliminary analysis. *Proceedings of the Society of Antiquaries of Scotland*, 131, pp. 349–373.
- THOMSON, G., 2002. Script lettering on Scottish tombstones: origins and influences. *Scottish Tradition*, 27, pp. 115–125.
- THOMSON, G., 2005. Inscribed in remembrance. *Ancestors*, December, pp. 43–47.
- THOMSON, G., 2006. The cultural significance of lettering on gravemarkers. *Borderlines*, 1(2), pp. 1–12.
- THOMSON, G., 2006. Irish discoid gravemarkers. *Archaeology Ireland*, 20(3), pp. 10–14.
- THOMSON, G., 2006. Irish discoid gravemarkers and inscriptional lettering. *Breifne*, 2006, pp. 247–273.
- THOMSON, G., 2006. Tombstone lettering in Scotland and New England—an appreciation of a vernacular culture. *Mortality*, 11(1), pp. 1–30.
- THOMSON, G., 2007. We're all doomed! ... to an eternity of gravestones with spelling errors. *DGBLife*, 3, pp. 30–33.
- THOMSON, G., 2008. *Aberdeenshire' historic kirkyards. Lettering and inscriptions*. Aberdeen: Aberdeenshire Council.
- THOMSON, G., 2008. The epigraphy on the inscription of the Hilton of Cadboll cross-slab. In: H. JAMES, I. HENDERSON, S.M. FOSTER and S. JONES, eds, *A Fragmented Masterpiece. Recovering the Biography of the Hilton of Cadboll Pictish Cross-Slab*. Edinburgh: Society of Antiquaries of Scotland, pp. 322–326.
- THOMSON, G., 2008. A possible discoid gravemarker from Kirkconnel Lea, Dumfriesshire. *Transactions of the Dumfries and Galloway Natural History and Antiquarian Society*, 82, pp. 51–57.
- THOMSON, G., 2008. Scottish discoid gravemarkers. The origins and classification of a rare type of artefact. *Markers*, 25, pp. 44–65.
- THOMSON, G., 2008. Scottish external funerary metal plates. *Proceedings of the Society of Antiquaries of Scotland*, 138, pp. 293–308.
- THOMSON, G., 2008. Small gravemarkers at Temple Balsall, Warwickshire: A remarkable coincidence. *Church Monuments*, 22, pp. 131–141.
- THOMSON, G., 2009. The Dalston discoid marker. *Transactions of the Cumberland and Westmoreland Antiquarian and Archaeological Society*, 9, pp. 47–56.
- THOMSON, G., 2009. A discoid marker from Collace, Perthshire. *Scottish Archaeological Journal*, 31, pp. 107–114.
- THOMSON, G., 2009. *Inscribed in Remembrance. Gravemarker Lettering: Form, Function and Recording*. Dublin: Wordwell.
- THOMSON, G., 2009. Lettering on Irish gravemarkers. Monaghan and beyond. In: G. MALONEY, ed, *Inscribed Histories: Burial Grounds, Folk Art and Archaeology. Proceedings of a Conference held at the Four Seasons Hotel, Monaghan, 8–9 June 2007*. Monaghan: Monaghan County Council Heritage Office, pp. 49–60.
- THOMSON, G., 2010a. The Ards Carver and the short crossing. *Ulster Folklife*, 53, pp. 103–120.
- THOMSON, G., 2010b. Grabsteininschriften in Hessen und Niedersachsen. Voneinander abweichende Ausprägungen in nachmittelalterlicher Zeit. *Friedhof und Denkmal*, 55(4), pp. 3–13.
- THOMSON, G., 2010c. *Lettering on Gravemarkers in Britain & Ireland*. Dublin: Wordwell Ltd.
- THOMSON, G., 2010d. On shape and form: morphometrics in gravemarker lettering research. *EJF Journal*, 14(Spring), pp. 33–52.
- THOMSON, G., 2010e. Penmanship in stone. Cursive and script lettering on post-Reformation gravemarkers. *The Scribe*, 87, pp. 20–23.
- THOMSON, G., 2011a. *Gravestones of the Basques. Atlas of Illustrations*. Waterbeck: George Thomson.
- THOMSON, G., 2011b. *Lettering on Gravemarkers. A Guide to Recording and Analysis*. Waterbeck: George Thomson.
- THOMSON, G., 2011c. *Vernacular memorials. Creativity in the Graveyard*. Waterbeck: George Thomson.
- THOMSON, G., 2013a. Contextualisation and typology of disc-headed and trapezoidal gravemarker forms in Scotland. *Scottish Archaeological Journal*, 34–5 (2012–13), pp. 1–24.
- THOMSON, G., 2013b. Gravemarker lettering—an international perspective. Newsletter, *Journal of the Glasgow and West of Scotland Family History Society*, 28, pp. 14–18.
- THOMSON, G., 2013c. Lettering on gravemarkers in Nova Scotia and Prince Edward Island: regional variation and the Scottish influence. *Markers*, 28, pp. 88–115.
- THOMSON, G., 2013d. Lettering on small brass plates. *Transactions of the Monumental Brass Society*, 18, pp. 467–489.
- THOMSON, G., 2015. A morphometric study of lettering on some distinctive grave slabs in Orkney, Scotland. *Markers*, 30, pp. 92–115.
- THOMSON, G., 2016a. *Dead Easy Statistics for Gravemarker Research*. Waterbeck: George Thomson.
- THOMSON, G., 2016b. Morphometric studies of gravestone

- inscriptions: 2 North Germany and Denmark. *Markers*, 31, pp. 96–113.
- TIERNEY, J., 2014. 60-second interview. John Tierney, Historic Graves Project [www.historicgraves.com]. *Archaeology Scotland*, 21(Winter), pp. 26–27.
- TRUBSHAW, B., 2014. Review of P Standford 2013 How to Read a Graveyard: Journeys in the Company of the Dead. *Time and Mind. The Journal of Archaeology, Consciousness and Culture*, 7(3), pp. 324–326.
- WATTERS, A., 1998. *Guide to Kirkcaldy Graveyards*. Kirkcaldy: Kirkcaldy Civic Society.
- WEEVER, J., 1631. *Ancient Funerall Monuments With in the United Monarchie of Great Britaine, Ireland and the Islands Adjacent ...* London.
- WELLS, G. and BISHOP, B., 2005. *Researching Your Graveyard*. Available at <http://www.historic-scotland.gov.uk/researching-your-graveyard.pdf>. Edinburgh: Historic Scotland. Research Report.
- WILLSHER, B., 1985. *Understanding Scottish Graveyards*. 1st edn. Edinburgh: Canongate Press.
- WILLSHER, B., 1995. *Understanding Scottish Graveyards*. 2nd edn. Edinburgh: Canongate Press.
- WILLSHER, B. and HUNTER, D., 1978. *Stones: A Guide to Some Remarkable Eighteenth Century Gravestones*. Edinburgh: Canongate.
- WORPOLE, K., 2003. *Last Landscapes. The Architecture of the Cemetery in the West*. London: Reaktion Books.
- YOUNG, J.R., 2003. *Stonehouse Kirkyard: the Phoenix Project*. Stonehouse: John R Young.
- BLACK, W.G., 1928. *The Scots Mercat 'Cross': An Inquiry as to its History and Meaning*. Glasgow and Edinburgh: William Hodge and Co Ltd.
- CALDER, A., 2004. The Scottish National War Memorial. In: W. KIDD and B. MURDOCH, eds, *Memory and Memorials: The Commemorative Century*. Aldershot: Ashgate, pp. 61–74.
- CALDER-ROSS, J., 1892. The market crosses of Scotland. *Scottish Notes and Queries*, November, pp. 88–89.
- CARTER MCKEE, K., 2013. Burns and the British Empire: viewing a Scottish monument from an imperial perspective. *Architectural Heritage*, 24, pp. 21–39.
- CLIFFORD, T., 1991. Introduction. In: F. PEARSON, ed, *Virtue and Vision: Scotland and Sculpture 1540–1990*. Edinburgh: National Galleries of Scotland, pp. 9–25.
- COLEMAN, J.J., 2014. *Remembering the Past in Nineteenth-Century Scotland. Commemoration, Nationality and Memory*. Edinburgh: Edinburgh University Press.
- COLLINS, S., 2002. *Ronald Rae: Sculpture*. Wakefield: Yorkshire Sculpture Park.
- DARWOOD, A. and MARTIN, P., 2005. *Milestones of Fife*. Not stated: East Neuk Preservation Society.
- DOUGLAS, R., 1936. *Market, Other Crosses in Moray*. xx: xx.
- DRUMMOND, J., 1861a. *Scottish Market-crosses*. Edinburgh.
- DRUMMOND, J., 1861b. Notice of some stone crosses, with especial reference to the market crosses of Scotland. *Proceedings of the Society of Antiquaries of Scotland*, 4 (1860–61), pp. 86–115.
- EDINBURGH COLLEGE OF ART, *Stone Project*, Edinburgh College of Art/AHRC. Available at <http://www.stoneproject.org/News.html> [April/1, 2016].
- ENGLISH HERITAGE, *Advice on Maintenance of War Memorials*. Available at <http://www.helm.org.uk/guidance-library/advice-on-maintenance-of-war-memorials/>.
- ENGLISH HERITAGE, *Theme: The Heritage of Death*. Available at: <https://historicengland.org.uk/images-books/publications/conservation-bulletin-66/>.
- ENGLISH HERITAGE (VARIOUS AUTHORS), Protecting their memory. *Conservation Bulletin*. The Heritage of Death, 66 (Summer 2011), pp. 23–41.
- FRASER, G.M., 1908. The market cross of Aberdeen. *Scottish Historical Review*, 5, pp. 177–180.
- GIFFORD, J., 2014. The National Monument of Scotland. *Architectural Heritage*, 25, pp. 43–83.
- GODFREY, W.H., 1919. War memorials: suggestions from the past. III Market crosses and halls. *The Architectural Review*, 46(Jul–Dec), pp. 63–69.

10.7 Public monuments

- ABERDEEN CITY COUNCIL, nd-last update, *Aberdeen March Stones*. Available at www.aberdeencity.gov.uk/heritagetrails [Mar/08, 2016].
- ANON, 2016. Kitchener memorial to benefit from new round of centenary war memorial grants. *History Scotland*, 16(1), pp. 6–6.
- ARCHER, G., 2009. *The Glorious Dead: Figurative Sculpture of British First World War Memorials*. Kirkstead: Frontier Publishing.
- BAKER, M., 1991. "Proper ornaments for a library or grotto": London sculptors and their Scottish patrons in the eighteenth century. In: F. PEARSON, ed, *Virtue and Vision: Scotland and Sculpture 1540–1990*. Edinburgh: National Galleries of Scotland, pp. 45–63.
- BELL, G.T., 1993. *Monuments to the Fallen: Scottish War Memorials of the Great War*. PhD edn. University of Strathclyde.

- GOW, I., 1991. The Scottish National War Memorial. In: F. PEARSON, ed, *Virtue and Vision: Scotland and Sculpture 1540–1990*. Edinburgh: National Galleries of Scotland, pp. 105–109.
- HALL, D., 1991. The twentieth century. In: F. PEARSON, ed, *Virtue and Vision: Scotland and Sculpture 1540–1990*. Edinburgh: National Galleries of Scotland, pp. 111–126.
- HALL, M.A., 2015a. *Lifeways in stone: memories and matter-reality in early medieval sculpture from Scotland. Early Medieval Stone Monuments. Materiality, Biography, Landscape*. Woodbridge: Boydell & Brewer, pp. 182–215.
- HAMILTON-GRIERSON, P., 1914. The boundary stone and the market cross. *Scottish Historical Review*, 12(45), pp. 24–36.
- HARVEY, J., FISHER, J. and HARRISON, J. 2011. *Stone: A Legacy and Inspiration for Art*. London: Black Dog.
- HAY, I., 1931. *Their Name Liveth. The Book of The Scottish National War Memorial*. London: John Lane, The Bodley Head Limited.
- HISTORIC SCOTLAND, 2013. *The Repair and Maintenance of War Memorials. Short Guide 3*. Edinburgh: Historic Scotland National Conservation Centre.
- HISTORIC SCOTLAND, 2014. In brief—New funding available for the repair of war memorials [War Memorials Trust]. *Focus*, pp. 6.
- HISTORY SCOTLAND, 2012. New—Mapping memorials to women in Scotland. *History Scotland*, 12(4), pp. 7.
- HOWARTH, D., 1991. Sculpture and Scotland 1540–1700. In: F. PEARSON, ed, *Virtue and Vision: Scotland and Sculpture 1540–1990*. Edinburgh: National Galleries of Scotland, pp. 27–37.
- HURTADO, S., 2012. *Genteel Mavericks: Women Sculptors in Victorian Britain*. Berlin edn. Peter Lang.
- INSH, F., 2014. *An aspirational era? Examining and defining Scottish visual culture 1620–1707*. Available at <http://ethos.bl.uk/OrderDetails.do?uin=uk.bl.ethos.646090>. PhD edn. University of Aberdeen.
- JOHNSTONE, B., 2012. *Carving History: The Life and Works of Andrew Currie*. Charleston SC: CreateSpace Independent Publishing Platform.
- KIDD, W., 1901. *The Dundee Market Crosses and Tolbooths. Palace Buildings, Whitehall Street, Dundee*: Published for private circulation.
- KING, A., 1993. *Memorials of the Great War in Britain: The Symbolism and Politics of Remembrance*. Oxford: Berg.
- LIEUALLAN, R., 2002. *A Sculptor for Scotland: the life and work of Sir John Robert Steell, RSA (1804–1891)*. PhD edn. University of Edinburgh.
- LOGIN, E., 2016. *Set in Stone? War Memorialisation as a Long-Term and Continuing Process in the UK, France and the USA*. Oxford: Archaeopress.
- LORIMER, H., 1988. *Hew Lorimer, Sculptor*. Edinburgh: Talbot Rice Gallery.
- MACARTHUR, M., 2003. *Iona Celtic Art. The Work of Alexander and Euphemia Ritchie*. Strathpeffer: The New Iona Press.
- MACLEOD, J., 2010a. Memorials and location: local versus national identity and the Scottish National War Memorial. *The Scottish Historical Review*, 89(1), pp. 73–95.
- MACLEOD, J., 2010b. “By Scottish hands, with Scottish money, on Scottish soil”: the Scottish National War Memorial and national identity. *The Journal of British Studies*, 49(Special Issue 01), pp. 73–96.
- MACMILLAN, D., 2014. *Scotland’s Shrine: The Scottish National War Memorial*. Farnham: Lund Humphries.
- MAIR, C., 1988. *Mercat Cross and Tolbooth: Understanding Scotland’s Old Burghs*. Edinburgh: John Donald Publishers Ltd.
- MCCULLOCH, W.T., 1857. Notices of the City Cross of Edinburgh, &c, illustrated by a model and drawings of the existing remains. *Proceedings of the Society of Antiquaries of Scotland*, 2 (1854–7), pp. 287–294.
- MCFARLAND, E.W., 2010. Commemoration of the South African War in Scotland, 1900–10. *The Scottish Historical Review*, 89(2: 228), pp. 194–223.
- MCKENZIE, R., 2002. *Public Sculpture of Glasgow*. Liverpool: Liverpool University Press.
- MCKENZIE, R., forthcoming. *The Public Sculpture of Edinburgh*. Liverpool: Liverpool University Press.
- MCLINTOCK, J., 2010. “My colossus, my overgrown child”: Anne Seymour Damer’s statue of George III in Edinburgh. *The Burlington Magazine*, 152(1282), pp. 18–28.
- MILLER, P., 1886. The mercat cross of Edinburgh, from 1365 to 1617: its site and form. *Proceedings of the Society of Antiquaries of Scotland*, 20 (1885–6), pp. 377–389.
- MUNRO, A.M., 1910. *The History of the Aberdeen Market Cross*. Aberdeen: Aberdeen Philosophical Society.
- MUNRO, D.M. and O’GRADY, O.J.T., 2015. *Boundary stones In the Lomond Hills: enclosure of the Falkland Commonly, Fieldwork Report Conservation Assessment*. Unpublished report for Living Lomonds Landscape Partnership. Available at <http://www.livinglomonds.org.uk/wp-content/uploads/2015/10/LLLP-WR1818->

- Boundary-Stone-Survey-Report_OJT-Heritage_Final-Version-website.pdf.
- PEARSON, F., ed, 1991a. *Virtue and Vision: Scotland and Sculpture 1540–1990*. Edinburgh: National Galleries of Scotland.
- PEARSON, F., 1991b. Sir John Steell and the idea of a native school of sculpture. In: F. PEARSON, ed, *Virtue and Vision: Scotland and Sculpture 1540–1990*. Edinburgh: National Galleries of Scotland, pp. 73–83.
- PENMAN, M., 2013c. Monuments and monumentality across medieval and early modern Europe. In: M. PENMAN, ed, *Monuments and Monumentality across Medieval and Early Modern Europe*. Donhead: Shaun Tyas, pp. 1–8.
- PICKLES, D., ed, 2015. *The Conservation, Repair and Management of War Memorials*. Available at <<https://historicengland.org.uk/images-books/publications/conservation-repair-management-war-memorials/>>. not stated: Historic England.
- PUBLIC MONUMENTS AND SCULPTURE ASSOCIATION, Public Monuments and Sculpture Association. Available at <http://www.pmsa.org.uk/>.
- RODGER, J., 2014. McCaig's Tower and a Scottish monumental tradition. *Journal of Scottish Historical Studies*, 34(1), pp. 90–106.
- SCOTTISH EXECUTIVE, 2005. *Carved Stones. Scottish Executive Policy and Guidance*. Edinburgh: Historic Scotland.
- SMAILES, H.E., 1991. Thomas Campbell and Laurence Macdonald: the Roman solution to the Scottish sculptor's dilemma. In: F. PEARSON, ed, *Virtue and Vision: Scotland and Sculpture 1540–1990*. Edinburgh: National Galleries of Scotland, pp. 65–71.
- SMAILES, H.E., 2014. A pride of lions: Noel Paton and the National Wallace Monument. *Architectural Heritage*, 25, pp. 85–106. SMALL, J.W., 1890. Scottish market crosses. *Transactions of the Stirling Natural History and Archaeological Society*, xx, pp. 51–58.
- STEPHEN, W.M., 1968. Wayside markers in Fife. *Proceedings of the Society of Antiquaries of Scotland*, 100 (1967–8), pp. 179–184.
- SUTHERLAND, G., 2014-last update, *The Kelsae Stane* (blog), 25/7/2014. Available at <http://gilessutherland.blogspot.co.uk/2014/07/the-kelsae-stane.html> [April/1, 2016].
- TEUTONICO, J. and FILDER, J., eds, 2001. *Monuments and the Millennium. Proceedings of a Joint Conference Organised by English Heritage and the United Kingdom Institute for Conservation*. London: James & James (Science Publishers) Ltd for English Heritage.
- THE MAUSOLEA & MONUMENTS TRUST, 2016-last update, The Mauseolea & Monuments Trust. Available at http://www.mmtrust.org.uk/about_us [Apr/20, 2016].
- THOMSON, L.J., 2000. *Scottish market crosses: the development of a risk assessment model*. Available at <http://hdl.handle.net/10059/596>. PhD edn. Aberdeen: Robert Gordon University.
- THOMSON, L.J. and URQUHART, D., 1999. Scottish market crosses: towards the development of a risk assessment model. In: M.S. JONES and R.D. WAKEFIELD, eds, *Aspects of Stone Weathering, Decay and Conservation. Proceedings of the 1997 Stone Weathering and Atmospheric Pollution Network Conference (SWAPNET'97)*. London: Imperial College Press, pp. 138–146.
- WALLACE, T., 1911. Military roads and fortifications in the Highlands, with bridges and milestones. *Proceedings of the Society of Antiquaries of Scotland*, 45 (1910–11), pp. 318–333.
- WAR MEMORIALS TRUST, War Memorials Trust. Available at <http://www.warmemorials.org/> [Feb/22, 2016].
- WINTER, J., 1998. *Sites of Memory, Sites of Mourning: The Great War in European Cultural History*. Cambridge: Cambridge University Press.
- WITHERS, C.W.J., 2001. Monuments: modern. In: M. LYNCH, ed, *The Oxford Companion to Scottish History*. Oxford: Oxford University Press, pp. 428–428.
- WOODWARD, R.L., 1991. Nineteenth-century sculpture in Glasgow. In: F. PEARSON, ed, *Virtue and Vision: Scotland and Sculpture 1540–1990*. Edinburgh: National Galleries of Scotland, pp. 92–97.
- YOUNG, M.E. and CHANDLER, B., 2015. Protecting Scotland's National War Memorial. *Focus*, 2015, pp. 38–38.

10.8 Heritage and conservation

- ABRAMSON, P., 2010. Prehistoric carved rocks on the MOD Training Estate: managing protection. In: T. BARNETT and K. SHARPE, eds, *Carving a Future for British Rock Art. New Directions for Research, Management and Presentation*. Oxford and Oakville: Oxbow Books, pp. 132–138.
- ALLEN, J.R., 1895. On the pressing need of a museum to contain a collection of casts, models, and photographs, illustrative of early art and architecture in Great Britain. *Archaeologia Oxiensis*, I–VI(II), pp. 75–89.
- ALLEN, J.R., 1888. A museum for Christian archaeology for Great Britain. *The Archaeological Review*, 1, pp. 191–196.
- ALLEN, J.R., 1901. The Early Christian monuments of Iona; with some suggestions for their better preservation. *Proceedings of the Society of Antiquaries of Scotland*,

- 35 (1900–01), pp. 79–93.
- ANDERSON, J., 1888. Our national monuments. *The Archaeological Review*, 1, pp. 186–191.
- ANON, 2016. Aberlady Angles community archaeology project launched. *History Scotland*, 16(2), pp. 13–13.
- ASHURST, J. and ASHURST, N., 1988. *Practical Building Conservation. English Heritage Technical Handbook. Volume 1: Stone Masonry*. Aldershot: Gower Technical Press.
- ASHURST, J. and DIMES, F.G., eds, 1990. *Conservation of Building and Decorative Stone Vol 1*. London: Butterworth-Heinemann Ltd.
- ATKINSON, N.K., 2005. Curators of the last resort: the role of a local museum service in the preservation and interpretation of early medieval sculptured stones. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 335–342.
- BARKAN, E. and BUSH, R., eds, 2002. *Claiming the Stones/naming the Bones: Cultural Property and the Negotiation of National and Ethnic Identity*. Available at <http://www.getty.edu/publications/virtuallibrary/0892366737.html?imprint=gtrs>. Los Angeles: Getty Research Institute.
- BARNETT, T. and DÍAZ-ANDREU, M., 2005. Knowledge capture and transfer in rock art studies: results of a questionnaire on rock art decay in Britain. *Conservation and Management of Archaeological Sites*, 7(1), pp. 35–48.
- BARNETT, T. and SHARPE, K., eds, 2010. *Carving a Future for British Rock Art. New Directions for Research, Management and Presentation*. Oxford and Oakville: Oxbow Books.
- BERTILSON, U. and MCDERMOTT, L., eds, 2004. *The Future of Rock Art—A World Review*. Stockholm: Rapport från Riksantikvarieämbetet 2004:7.
- BJELLAND, T. and HELLBERG, B.H., 2005. *Bergkunst. En veiledning i dokumentasjon, skjøtsel, tilrettelegging og overvåking av norsk bergkunst*. Available at http://www.spatial.baltic.net/_files/Handbook_Preservation.pdf. Norsk Faggruppe for Bergkunstkonservering.
- BOUGHEY, K., 2010. The role of the amateur in the study of UK prehistoric cup-and-ring rock art. In: T. BARNETT and K. SHARPE, eds, *Carving a Future for British Rock Art. New Directions for Research, Management and Presentation*. Oxford and Oakville: Oxbow Books, pp. 65–80.
- BOYES, N., 1999. Stone conservation within Historic Scotland from 1954 to the present day. In: M.S. JONES and R.D. WAKEFIELD, eds, *Aspects of Stone Weathering, Decay and Conservation. Proceedings of the 1997 Stone Weathering and Atmospheric Pollution Network Conference (SWAPNET'97)*. London: Imperial College Press, pp. 170–178.
- BRIEN, O., 2011. *Guidance for the Care, Conservation and Recording of Historic Graveyards*. Available at http://www.heritagecouncil.ie/fileadmin/user_upload/Publications/Archaeology/Guidance_Historic_Graveyards.pdf. 2nd edn. Kilkenny: The Heritage Council of Ireland.
- BRYCE, T., CALDWELL, D., SKINNER, T. and WELANDER, R., 1981. Replica making—effigies from Houston and a tomb front from Renfrew. *SSCR Newsletter*, 32(March), pp. xx–xx.
- BRYCE, T. and CALDWELL, D.H., 1981. Scottish medieval sculpture—the making of reproductions and their uses. *Museums Journal*, 81(2), pp. 67–70.
- BUCKHAM, S., 2004. *Sources of Financial Assistance for the Conservation of Scotland's Historic Graveyards*. Available at <http://conservation.historic-scotland.gov.uk/conservationofgraveyards.pdf>. Edinburgh: Historic Scotland. Research Report.
- BUCKHAM, S., 2013a. *The Edinburgh Graveyards Project. A Scoping Study to Identify Strategic Priorities for the Future Care and Enjoyment of Five Burial Grounds in the Heart of the Edinburgh World Heritage Site*. Available at http://www.wmf.org/sites/default/files/wmf_publication/Edinburgh%20Graveyards%20Project.pdf. New York: World Monuments Fund.
- BUCKHAM, S. and LLOYD, K., 2013-last update, *Kirkyard heritage: graveyard conservation in Scotland*. Available at <http://www.buildingconservation.com/articles/kirkyard-heritage/kirkyard-heritage.htm> [June/16, 2015].
- CALDWELL, D., MILLER, S., MCGIBBON, F. and RUCKLEY, N.A., 2006. Geological tools to interpret Scottish medieval carved sculpture; combined petrological and magnetic susceptibility analysis. In: M. MAGETTI and B. MESSAGA, eds, *Geomaterial in Cultural Heritage; Special Publication of the Geological Society of London 257*. London: Geological Society of London, pp. 283–306.
- CAMERON, S., URQUHART, D., WAKEFIELD, R. and YOUNG, M., 1997. *Biological Growths on Sandstone Buildings. Control and Treatment*. Edinburgh: Historic Scotland. Technical Advice Note 10.
- COWIE, T. and MCKEAGUE, P., 2010. Mapping material culture: exploring the interface between museum artefacts and their geographical context. Available at <http://dx.doi.org/10.3366/saj.2011.0009>. *Scottish Archaeological Journal*, 32(1), pp. 73–93.
- DARVILL, T. and FERNANDES, A.P.B., eds, 2014a. *Open-air Rock-art Conservation and Management. State of the*

Art and Future Perspectives. New York and London: Routledge.

- DAVEY, A., 2008. *Finials and Terminals. Inform Guide*. Edinburgh: Historic Environment Scotland.
- DOEHNE, E. and PRICE, C.A., 2010. *Stone Conservation. An Overview of Current Research*. Available at <http://www.worldscientific.com/doi/abs/10.1142/9781783263431>. 2nd edn. Los Angeles: Getty Conservation Institute.
- DOUGLAS-JONES, R., HUGHES, J.J., JONES, S. and YARROW, T., 2016. Science, value and material decay in the conservation of historic environments. *Journal of Cultural Heritage*.
- EDWARDS, N. and HALL, M.A., 2005. Protecting carved stones in Scotland and Wales. *Church Archaeology*, 7–9 (2003–05), pp. 127–129.
- EKLUND, J.A., 2013. *Biological Growth on Masonry. Inform Guide*. Edinburgh: Historic Scotland.
- EKLUND, J.A. and HUMMELT, K., 2013. *Growing Old Gracefully. Aesthetic Issues Surrounding Historic Masonry. Inform Guide*. Edinburgh: Historic Environment Scotland.
- ENGLISH HERITAGE, 2000. *Rock Art Pilot Project*. Bournemouth: Bournemouth University, Institute of Archaeology and English Heritage.
- ENGLISH HERITAGE, 2011. *Designation Listing Selection Guide: Commemorative Structures*. Available at https://content.historicengland.org.uk/images-books/publications/dlsg-commemorative-structures/commemorative_structures_final.pdf. London: English Heritage.
- FOSTER, S., 2002. Carved stones policy—new developments. In: A. DAKIN, ed, *Conservation of Historic Graveyards*. Edinburgh: Historic Scotland, pp. 1–4.
- FOSTER, S.M., 1998b. Discovery, recovery, context and display. In: S.M. FOSTER, ed, *The St. Andrews Sarcophagus: A Pictish Masterpiece and its International Connections*. Dublin: Four Courts Press, pp. 35–62.
- FOSTER, S.M., 2001. *Place, Space and Odyssey. Exploring the Future of Early Medieval Sculpture*. Rosemarkie: Groam House Museum.
- FOSTER, S.M., 2002. Planning for early medieval sculpture. The recovery and recognition of sense, place and setting. In: L.M. GREEN and P.T. BIDWELL, eds, *Heritage of the North Sea Region. Conservation and Interpretation*. Donhead St Mary: Donhead, pp. 151–171.
- FOSTER, S.M., 2005a. Know your properties, recognise the possibilities: Historic Scotland's strategy for the interpretation of early medieval sculpture in its care. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 315–323.
- FOSTER, S.M., 2005b. Introduction. Able Minds and Practised Hands: historical fact, 21st-century aspiration. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 1–12.
- FOSTER, S.M., 2010a. The curatorial consequences of being moved, moveable or portable: the case of carved stones. *Scottish Archaeological Journal*, 32(1), pp. 15–28.
- FOSTER, S.M., 2010b. Shaping up rock art in Scotland: past progress, future directions. In: T. BARNETT and K. SHARPE, eds, *Carving a Future for British Rock Art. New Directions for Research, Management and Presentation*. Oxford and Oakville: Oxbow Books, pp. 82–93.
- FOSTER, S.M., 2013a. Embodied energies, embedded stories: releasing the potential of casts of early medieval sculptures. In: J. HAWKES, ed, *Making Histories. Proceedings of the Sixth International Conference on Insular Art York 2011*. Donington: Shaun Tyas, pp. 339–355.
- FOSTER, S.M., 2015a. Circulating agency: the V&A, Scotland and the multiplication of plaster casts of 'Celtic crosses'. *Journal of the History of Collections*, 27(1), pp. 73–96.
- FOSTER, S.M., in prep. *Smashing casts: replication of early medieval sculpture as a case study in the fragility of cultural value*.
- FOSTER, S.M., submitted. Replication of things: the case for composite biographical approaches. In: J.F. CODELL and L. HUGHES, eds, *Remakings: Replications and Reproductions in the Nineteenth Century and Beyond*. Edinburgh: Edinburgh University Press (tbc).
- FOSTER, S.M., BLACKWELL, A. and GOLDBERG, M., 2014. The legacy of nineteenth-century replicas for object cultural biographies: lessons in duplication from 1830s Fife. *Journal of Victorian Culture*, 19(2), pp. 137–160.
- FOSTER, S.M. and CROSS, M., eds, 2005. *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney.
- FOSTER, S.M. and CURTIS, N.G.W., 2016. The thing about replicas: why historic replicas matter. *European Journal of Archaeology*, 19(1), pp. 122–148.
- FOSTER, S.M. and JONES, S., 2008. Recovering the biography of the Hilton of Cadboll cross-slab. In: H. JAMES, I. HENDERSON, S.M. FOSTER and S. JONES, eds, *A Fragmented Masterpiece. Recovering the Biography*

of the Hilton of Cadboll Pictish Cross-Slab. Edinburgh: Society of Antiquaries of Scotland, pp. 205–284.

- GIESEN, M.J., UNG, A., WARKE, P.A., CHRISTGEN, B., MAZEL, A.D. and GRAHAM, D.W., 2014. Condition assessment and preservation of open-air rock art panels during environmental change. *Journal of Cultural Heritage*, 15(1), pp. 49–56.
- GRAY, T.E. and FERGUSON, L.M., 1997. *Photographing Carved Stones. A Practical Guide to Recording Scotland's Past*. Balgavies: Pinkfoot Press (for the National Committee on the Carved Stones of Scotland in association with Historic Scotland).
- GUSTAFSSON, A. and KARLSSON, H.2., 2014. *Authenticity in Practice. A Comparative Discussion of the Authenticity, Staging and Public Communication at Eight World Heritage Classified Rock Art Sites*. Lindome: Bricoleur Press.
- HALL, M.A., 2005a. A museum curator's adventures in Pictland. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 343–352.
- HALL, M.A., 2013a. Re-making, re-mediating and re-mythopoesis: the sculptured stone cross in popular cinema. In: J. HAWKES, ed, *Making Histories. Proceedings of the Sixth International Conference on Insular Art York 2011*. Donington: Shaun Tyas, pp. 399–415.
- HALL, M., 2013b. Iona revealed. 'In bright, everlasting light' arisen [review of new HS display]. *Newsletter of the Society for Medieval Archaeology*, 50, pp. 14–15.
- HAYNES, N., 2008. *Research Report on the Extent of the Ecclesiastical Heritage*.
- HEACS, 2009. *Report with Recommendations on the Long-Term Conservation of the Ecclesiastical Heritage in a Time of Demographic Change. Presented to Mike Russell, MSP, Minister for Culture, External Affairs and the Constitution, September 2009*. Edinburgh: HEACS.
- HENDERSON, I., 1993a. Introduction. The making of The *Early Christian Monuments of Scotland*. In: J.R. ALLEN and J. ANDERSON, eds, *The Early Christian Monuments of Scotland*. Balgavies: Pinkfoot Press, pp. thirteen–forty.
- HENRY, A., 2006. *Stone Conservation: Principles and Practice*. Shaftesbury: Donhead Publishing.
- HIGGITT, J., 2005. Towards a 'new ECMS': the proposal for a new Corpus of Early Medieval Sculpture in Scotland. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 375–379.
- HISTORIC ENVIRONMENT SCOTLAND, 2016. *Historic Environment Scotland Policy Statement*. Available at <https://www.historicenvironment.scot/advice-and-support/planning-and-guidance/legislation-and-guidance/historic-environment-scotland-policy-statement/>. Edinburgh: Historic Environment Scotland.
- HISTORIC SCOTLAND, Carved Stones. Available at <http://www.historic-scotland.gov.uk/index/heritage/valuourheritage/carvedstones>.
- HISTORIC SCOTLAND, 1994. Appendix in I. Maxwell, 'The preservation of Dark Age Sculpture'. In: E.O. BOWMAN and N.M. ROBERTSON, eds, *Stones, Symbols and Stories: Aspects of Pictish Studies. Proceedings from the Conferences of the Pictish Arts Society, 1992*. Edinburgh: Pictish Arts Society, pp. 3–18.
- HISTORIC SCOTLAND, 2003. *Emergency Measures for Historic Memorials. A Short Guide for Cemetery Managers*. Edinburgh: Historic Scotland.
- HISTORIC SCOTLAND, 2013. *The Repair and Maintenance of War Memorials. Short Guide 3*. Edinburgh: Historic Scotland National Conservation Centre.
- HISTORIC SCOTLAND TECHNICAL CONSERVATION RESEARCH GROUP, 2005. *Masonry Decay. Inform Guide*. Edinburgh: Historic Scotland.
- HYGEN, A., 2006. *The Rock Art Project 1996–2005. Final Report from the Directorate for Cultural Heritage*. Available at http://brage.bibsys.no/xmlui/bitstream/handle/11250/175756/1/Bergkunst_sluttrapport_eng.pdf. Oslo: Riksantikvaren.
- HYGEN, A. and BENGTTSSON, L., 2000. *Rock Carvings in the Borderlands. Bohuslän and Østfold*. Gothenburg: Warne Förlag.
- ICCROM, 13th International Congress on the Deterioration and Conservation of Stone. Available at <http://www.iccrom.org/classifieds/13th-international-congress-on-the-deterioration-and-conservation-of-stone/> [April/07, 2016].
- ICOMOS - ISCS, ICOMOS International Scientific Committee for Stone. Available at <http://iscs.icomos.org/> [April/07, 2016].
- INKPEN, R.J., 1999. Gravestones: problems and potentials as indicators of historic changes in weathering. In: M.S. JONES and R.D. WAKEFIELD, eds, *Aspects of Stone Weathering, Decay and Conservation. Proceedings of the 1997 Stone Weathering and Atmospheric Pollution Network Conference (SWAPNET'97)*. London: Imperial College Press, pp. 16–27.
- JONES, S., 2004. *Early Medieval Sculpture and the Production of Meaning, Value and Place: The Case of Hilton of Cadboll*. Available at <http://conservation.historic-scotland.gov.uk/publication-detail.htm?pubid=7893>. Edinburgh: Historic Scotland. Research Report.

- JONES, S., 2005. 'That stone was born here and that's where it belongs': Hilton of Cadboll and the negotiations of identity, ownership and belonging. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 37–53.
- JONES, S., 2006a. Making place, resisting displacement: conflicting national and local identities in Scotland. In: L. SMITH, ed, *Cultural Heritage: Critical Concepts in Media and Cultural Studies, Volume 4*. London: Routledge, pp. 94–114.
- JONES, S., 2006b. "They made it a living thing didn't they": the growth of things and the fossilisation of heritage. In: R. LAYTON, S. SHENNAN and P. STONE, eds, *A Future for Archaeology: The Past in the Present*. London: UCL Press, pp. 107–126.
- JONES, S., 2010. Monuments, memory and identity: exploring the social value of place. *Conservation Bulletin*, 63, pp. 22–24.
- JONES, S., 2011. "Sorting stones": monuments, memory and resistance in the Scottish Highlands. In: M.C. BEAUDRY and J. SYMONDS, eds, *Interpreting the Early Modern World, Contributions to Global Historical Archaeology*. New York: Springer Science and Business Media, pp. 113–139.
- JONES, S., 2012. 'Thrown like chaff in the wind': excavation, memory and the negotiation of loss in the Scottish Highlands. *International Journal of Historical Archaeology*, 16(2), pp. 346–366.
- JONES, S. and YARROW, T., 2013. Crafting authenticity: an ethnography of conservation practice. *Journal of Material Culture*, 18(1), pp. 3–26.
- KRUMBEIN, W., GORBUSHINA, A., VALERO, J., MCCULLAGH, C., YOUNG, M., ROBERTSON, P., VENDRELL, M., ALKOMI, H., SAARELA, M., FORTUNIE, I. and KOSCIEWICZ-FLEMING, L., 2006. *Investigations into the Control of Biofilm Damage with Relevance to Built Heritage*. Edinburgh: Historic Scotland. Research Report.
- LAST, J., 2010. Between a rock and a hard place? The role of rock art in prehistoric research. In: T. BARNETT and K. SHARPE, eds, *Carving a Future for British Rock Art. New Directions for Research, Management and Presentation*. Oxford and Oakville: Oxbow Books, pp. 123–131.
- MASONRY CONSERVATION RESEARCH GROUP, 1995. *Research Commission Investigating Biological Growths, Biocide Treatment, Soiling and Decay of Sandstones Buildings and Monuments in Scotland: Research Report*. Edinburgh: Historic Scotland.
- MAXWELL, I., 2005. Scotland's early medieval sculpture in the 21st century: a strategic overview of conservation problems, maintenance and replication methods. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 159–174.
- MAXWELL, I., NANDA, R. and URQUHART, D., 2001. *Conservation of Historic Graveyards. Guide for Practitioners 2*. Edinburgh: Historic Scotland.
- MCMILLAN, A., 1997. *Quarries of Scotland*. Edinburgh: Historic Scotland. Technical Advice Note 12.
- MINISTRY OF JUSTICE, 2009. *Managing the Safety of Burial Ground Memorials: Practical Advice for Dealing with Unstable Memorials*. Available at <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/326725/safety-burial-grounds.pdf>. Not stated: Ministry of Justice.
- MUIR, C., 2003. A Quinque Fellowship in stone conservation. *Scottish Society for Conservation and Restoration*, 14(3), pp. 11–16.
- MUIR, C., 2005. The containment of Scottish carved stones *in situ*: an environmental study of the efficacy of glazed enclosures. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 175–186.
- MUIR, C., 2006a. *Graffiti and its Safe Removal, 'Inform' Guide No.1*, Edinburgh: Historic Scotland.
- MUIR, C., 2006b. Sandstone. In: A. HENRY, ed, *Stone Conservation, Principles and Practice*. Shaftesbury: Donhead Publishing, pp. 191–215.
- MUIR, C. and DURMAN, N., 2006. Principles and practice. In: A. HENRY, ed, *Stone Conservation, Principles and Practice*. Shaftesbury: Donhead Publishing, pp. 75–88.
- MULVIN, L. and LEWIS, J.O., 1994. Architectural detailing, weathering and stone decay. *Building and Environment*, 29(1), pp. 113–138.
- NASH, G. and STANFORD, A., 2010. Encryption and display: recording new images on the Calderstones in Liverpool. In: T. BARNETT and K. SHARPE, eds, *Carving a Future for British Rock Art. New Directions for Research, Management and Presentation*. Oxford and Oakville: Oxbow Books, pp. 11–24.
- NATIONAL TRUST OF AUSTRALIA (NEW SOUTH WALES), 2009. *Guidelines for Cemetery Conservation*. Available at http://www.nationaltrust.org.au/assets/9719/1/cemetery_conservation_guide.pdf. 2nd edn. National Trust of Australia.
- NORTHLIGHT HERITAGE, nd [2014?]. Weaving Truth with Trust [textile created at Govan Old Parish Church with inspiration from the Govan Stones]. *Northlight Heritage*.
- ODGERS, D., 2011. *Caring for Historic Graveyard and Cemetery Monuments*. Available at <<http://www.helm.org>>.

- uk/guidance-library/caring-historic-graveyard-cemetery-monuments/>. xxxx: English Heritage.
- OPTOELECTRONICS RESEARCH CENTRE UNIVERSITY OF SOUTHAMPTON and ET AL., 2005. *Laser Stonecleaning in Scotland*. Edinburgh: Historic Scotland. Research Report.
- OWEN, K. and FLEMING, F., 2016. The two towers: return of the stones [Elgin Cathedral carved stone collection display]. *History Scotland*, 16(2), pp. 46–47.
- PICKLES, D., ed, 2015. *The Conservation, Repair and Management of War Memorials*. Available at <<https://historicengland.org.uk/images-books/publications/conservation-repair-management-war-memorials/>>. not stated: Historic England.
- PRAY NOW GROUP, 2015. *Living Stones. Pray Now Weekly Devotions & Monthly Prayer Activities*. Norwich: St Andrews Press.
- RIEGL, A., 1982 [1902]. The modern cult of monuments: its character and origins. Reprinted in *Oppositions 25*. New York: Rizzoli.
- RITCHIE, J.N.G., 1998. *Recording Early Christian Monuments in Scotland*. Rosemarkie: Groam House Museum.
- ROBERTS, L.A., 23. The role of sculpture in communicating archaeology in museums. Available at DOI: <http://doi.org/10.5334/pia.425>. *Papers from the Institute of Archaeology*, 1, pp. Art. 6.
- SCOTTISH EXECUTIVE, 2005. *Carved Stones. Scottish Executive Policy and Guidance*. Edinburgh: Historic Scotland.
- TEUTONICO, J. and FILDER, J., eds, 2001. *Monuments and the Millennium. Proceedings of a Joint Conference Organised by English Heritage and the United Kingdom Institute for Conservation*. London: James & James (Science Publishers) Ltd for English Heritage.
- THOMSON, L.J. and URQUHART, D., 1999. Scottish market crosses: towards the development of a risk assessment model. In: M.S. JONES and R.D. WAKEFIELD, eds, *Aspects of Stone Weathering, Decay and Conservation. Proceedings of the 1997 166 Stone Weathering and Atmospheric Pollution Network Conference (SWAPNET'97)*. London: Imperial College Press, pp. 138–146.
- UNIVERSITY OF STIRLING, *Future Thinking on Carved Stones in Scotland*. Available at <https://www.stir.ac.uk/cehp/projects/futurethinkingoncarvedstonesinscotland/> [April/01, 2016].
- UNIVERSITY OF THE WEST OF SCOTLAND, *Materiality, Authenticity and Value (MAV) Project*. Available at <http://www.uws.ac.uk/mavproject/> [Mar/14, 2016].
- URQUHART, D., 1999. *The Treatment of Graffiti on Historic Surfaces*. Available at <<http://conservation.historic-scotland.gov.uk/publication-detail.htm?pubid=8548>>. Edinburgh: Historic Scotland. Technical Advice Note 18.
- URQUHART, D., 2007. *Stonemasonry Material and Skills*. Edinburgh: Historic Scotland. Technical Advice Note 31.
- URQUHART, D., 2013–14. *Historic Concrete in Scotland. Short Guide*. Edinburgh: Historic Scotland.
- URQUHART, D., YOUNG, M. and CAMERSON, S., 1997. *Stonecleaning of Granite Buildings*. Edinburgh: Historic Scotland.
- WALDERHAUG SAETERSDAL, E.M., 2000. Ethics, politics and practices in rock art conservation. *Public Archaeology*, 1, pp. 163–180.
- WELANDER, R.D.E., 1998. Recent developments in conservation and presentation. In: S.M. FOSTER, ed, *The St. Andrews Sarcophagus: A Pictish Masterpiece and its International Connections*. Dublin: Four Courts Press, pp. 63–70.
- WELLS, G. and BISHOP, B., 2005. *Researching Your Graveyard*. Available at <http://www.historic-scotland.gov.uk/researching-your-graveyard.pdf>. Edinburgh: Historic Scotland. Research Report.
- YARROW, T. and JONES, S., 2014. ‘Stone is stone’: engagement and detachment in the craft of conservation masonry. *Journal of the Royal Anthropological Institute*, 20, pp. 256–275.
- YATES, T., BUTLIN, R. and HOUSTON, J., 1999. *Assessment Methodology Handbook. Carved Stone Decay in Scotland. Building Research Establishment commissioned by TCRE*. Edinburgh: Historic Scotland.
- YEOMAN, P., 2005. Proposals for the re-display of the early medieval sculpture collection at Whithorn: the evolution of an interpretative approach. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland’s Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 325–333.
- YOUNG, M., BALL, J., LAING, R., CORDINER, P. and HULLS, J., 2003. *The Consequences of Past Stonecleaning Intervention on Future Policy and Resources*. Edinburgh: Historic Scotland. Research Report.
- YOUNG, M.E., MURRAY, M. and CORDINER, P., 1999. *Stone consolidants and chemical treatments in Scotland*. Available at <http://www2.rgu.ac.uk/schools/mcrg/miconsol.htm>. Unpublished report for Historic Scotland edn.

10.9 Digital

3D ICONS, 3D ICONS. Available at <http://3dicons.ceti.gr/>

- index.php/component/search_gmapfp/?Country=-All-&County=-All- &City=-All-&Order=Alpha&Word=scotland&Modid=90&Itemid=435 [03/15, 2015].
- 3D ICONS, 3D ICONS Ireland. Available at <http://3dicons.ie/> [03/15, 2015].
- 3D ICONS, About 3D ICONS. Available at <http://3dicons-project.eu/> [03/15, 2015].
- ABBOTT, M. and ANDERSON-WHYMARK, H., 2012. *Stonehenge Laser Scan Analysis: Archaeological Analysis Report. English Heritage Project 6457. Research Report Series no.32-2012*. English Heritage.
- ARCHAEOLOGY SCOTLAND, 2015. Archaeology in a digital age: how new technology is shaping Scotland's past [Edition's theme]. *Archaeology Scotland*, 22.
- BENTKOWSKA-KAFEL, A., DENARD, H. and BAKER, D., 2012. *Paradata and Transparency in Virtual Heritage*. Farnham: Ashgate.
- BO'NESS COMMUNITY COUNCIL, *Bridgeness Slab*. Available at <http://www.bridgenessslab.org.uk/index.php/roman-history-scotland/11-the-mark-of-rome-bridgeness-slab-film> [03/15, 2015].
- BRYAN, P., 2015. *Experience and practical insights: 3D laser scanning for heritage*. Available at <http://www.geoinformatics.com/wp-content/uploads/2015/12/GEO815DIGI.pdf>. *Geoinformatics*, 18(8), pp. 10–13.
- CARTY, A., 2005. Three-dimensional recording of Pictish sculpture. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 367–374.
- CYARK, *Rosslyn Chapel*. Available at <http://archive.cyark.org/rosslyn-chapel-intro> [April/04, 2016].
- DAILY MAIL, 26 February 2012, 2012-last update, *No longer one of a kind: Smithsonian makes copies of artifacts using 3D printer to lend them to other museums*. Available at <http://www.dailymail.co.uk/news/article-2106593/No-longer-kind-Smithsonian-makes-copies-artifacts-using-3D-printer-lend-museums.html> [11/5, 2013].
- DISCOVERY PROGRAMME 3D ICONS, 2015-last update, *Turntable of Early Christian Carved Figure 1, White Island*. Available at <https://www.youtube.com/watch?v=MvWlwmk51hU> [03/15, 2015].
- DUBLIN INSTITUTE FOR ADVANCED STUDIES, *Ogham in 3D*. Available at <http://ogham.celt.dias.ie/menu.php?lang=en&menuitem=05> [03/15, 2015].
- EUROPEANA, *Exploring Europeana*. Available at http://www.europeana.eu/portal/usingeuropeana_explore.html [03/15, 2015].
- FOSTER, S.M. and CURTIS, N.G.W., 2016. The thing about replicas: why historic replicas matter. *European Journal of Archaeology*, 19(1), pp. 122–148.
- FRASER, I., 2015. Robert the Bruce Tomb reconstructed in 3D. *Focus*, 2015, pp. 34–34.
- FRASER, I., forthcoming. The lost tomb of Robert the Bruce. *Proceedings of the Society of Antiquaries of Scotland*.
- GALEAZZI, F., DI GIUSEPPANTONIO, D.F. and MATTHEWS, J.L., 2015. Comparing 2D pictures with 3D replicas for the digital preservation and analysis of tangible heritage. *Museum Management and Curatorship*, pp. 1–22.
- HENSEY, R. and ROBIN, G., 2011. More than meets the eye: new recordings of megalithic art in north-west Ireland. *Oxford Journal of Archaeology*, 30(2), pp. 109–130.
- JEFFREY, S., 2003. *Three dimensional modeling of Scottish Early Medieval Sculpted Stones*. Available at http://archaeologydataservice.ac.uk/archives/view/jeffrey_2004/. PhD edn. University of Glasgow.
- JEFFREY, S., 2005. The missing dimension: future directions in digital recording of early medieval sculptured stone. In: S.M. FOSTER and M. CROSS, eds, *Able Minds and Practised Hands: Scotland's Early Medieval Sculpture in the 21st Century*. Leeds: Society for Medieval Archaeology/Maney, pp. 353–36.
- JEFFREY, S., 2015. Challenging heritage visualisation: beauty, aura and democratisation. *Open Archaeology*, 1(1), pp. 144–152.
- JEFFREY, S., HALE, A., JONES, C., JONES, S. and MAXWELL, M., 2015. The ACCORD project: archaeological community co-production of research resources. In: F. GILIGNY, F. DJINDJIAN, L. COASTA, P. MOSCATI and S. ROBERT, eds, *CAA 2014—21st Century Archaeology: Concepts, Methods and Tools. Proceedings of the 42nd Annual Conference on Computer Applications and Quantitative Methods in Archaeology*. Oxford: Archaeopress, pp. 289–295.
- JEFFREY, S. and JONES, S., 2016-last update, *Material/Digital authenticity: thoughts on digital 3D models and their material counterparts (Savage Minds. Notes and Queries in Anthropology)*. Available at <http://savageminds.org/2016/01/29/material-digital-authenticity-thoughts-on-digital-3d-models-and-their-material-counterparts/> [Feb/02, 2016].
- JONES, A.M., COCHRANE, A., CARTER, C., DAWSON, I., DÍAZ-GUARDAMINO, M., KOTOULA, E. and MINKIN, L., 2015. Digital imaging and prehistoric imagery: a new analysis of the Folkton Drums. *Antiquity*, 89(347), pp. 1083–1095.
- KASTEN, M., In prep. *Three-dimensional Imaging of the Govan Stones*. PhD edn. University of Glasgow.
- KITZLER ÅHFELDT, L., *3D data—picture stones from Gotland*. Available at [10](http://www.raa.se/kulturarvet/arkologi-fornlamningar-och-fynd/runstenar/runrstandets-</p>
</div>
<div data-bbox=)

- dynamik/3d-data-picture-stones-from-gotland/ [Jan/16, 2016]. Available at <http://www.pitoti.org/index.php/en/> [Apr/20, 2016].
- KITZLER ÅHFELDT, L., 2002. *Work and Worship. Laser Scanner Analysis of Viking Age Rune Stones*. Stockholm.
- KITZLER ÅHFELDT, L., 2013. 3D-scanning of Gotland Picture Stones. With supplementary material: Digital catalogue of 3D data. *Journal of Nordic Archaeological Science*, 18, pp. 55–65.
- LERMA, J.L. and MUIR, C., 2014. Evaluating the 3D documentation of an early Christian upright stone with carvings from Scotland with multiples images. *Journal of Archaeological Science*, 46, pp. 311–318.
- LOWE, A. and AHMON, J., 2003. *The Dama de Elche. Digital Technology in Conservation*.
- MAXWELL, M., 2014. ACCORD: the future of community heritage in 3D. *Archaeology Scotland*, 21(Winter), pp. 21–21. MICROPASTS, MicroPasts [crowd-sourcing heritage projects]. Available at <http://micropasts.org/> [03/15, 2015].
- MUDGE, M., MALZBENDER, T., SCHROER, C. and LUM, M., 2006. New Reflection Transformation Imaging methods for rock art and multiple-viewpoint display. In: M. IOANNIDES, D. ARNOLD and F. NICCOLUCCI, eds, *Proceedings of the 7th International Symposium on Virtual Reality, Archaeology and Cultural Heritage (VAST 2006)*. e-book: Eurographics Association, pp. 195–200.
- MUIR, C., 2010. Scanning the Dunadd carvings. *Focus*, pp. 28–31.
- NASH, G. and STANFORD, A., 2010. Encryption and display: recording new images on the Calderstones in Liverpool. In: T. BARNETT and K. SHARPE, eds, *Carving a Future for British Rock Art. New Directions for Research, Management and Presentation*. Oxford and Oakville: Oxbow Books, pp. 11–24.
- NIVEN, K., JEFFREY, S. and RICHARDS, J.D., 2014. Archiving three-dimensional archaeology: new technologies, new solutions? In: G. EARL, T. SLY, A. CHRYSANTHI, P. MURRIETA-FLORES, C. PAPADOPOULOS, I. ROMANOWSKA and D. WHEATLEY, eds, *Archaeology in the Digital Era Volume II. e-papers from the 40th Annual Conference of Computer Applications and Quantitative Methods in Archaeology (CAA), Southampton, UK, 26–30 March 2012*. Available at <http://dare.uva.nl/aup/en/record/500958>. e-book: Amsterdam University Press, pp. 289–294.
- NUI GALWAY, *Irish Inscribed Stones Project*. Available at <http://www.nuigalway.ie/irish-inscribed-stones/> [03/15, 2015].
- PAYNE, E., 2012. Imaging techniques in conservation. *Journal of Conservation and Museum Studies*, 10(2), pp. 17–29. PILOTI, Digital Rock Art from Ancient Europe.
- SAGROTT, S., 2015. 3D recording visualisation of the Falkland Palace roundels. Available at <http://www.archaeologists.net/sites/default/files/SG%20CIFA%20Newsletter%20August%202015.pdf>. *CIFA Scottish Group Newsletter*, August, pp. 5–6.
- SAGROTT, S., 24 July 2015, 2015-last update, *New light on old stone: 3D recording & visualisation of the Falkland Palace roundels* [Homepage of Day of Archaeology], [Online]. Available at <http://www.dayofarchaeology.com/heritage-data-and-the-national-trust-for-scotland/#more-20190> [Apr/18, 2016].
- SAGROTT, S., 12 July 2015, 2015-last update, *New Light on Old Stone: Falkland Palace* [Homepage of British Archaeology News Resource], [Online]. Available at <http://www.bajrfed.co.uk/bajrpress/new-light-on-old-stone-falkland-palace/> [Apr/18, 2016].
- SAVE WEMYSS ANCIENT CAVES SOCIETY, *Wemyss Cave*. Available at <http://www.wemysscaves.org/> [03/15, 2015].
- SMITHSONIAN INSTITUTION, *Smithsonian X 3D* [Heritage Jams]. Available at <http://3d.si.edu/> [03/15, 2015].
- THE DISCOVERY PROGRAMME, 2014-last update, *Marigold Stone* [Cardonagh, Donegal]. Available at <https://sketchfab.com/models/1958f8c5a86b4644bb130d1c67d46535> [03/15, 2014].
- THE GALLOWAY PICTS PROJECT, *The Galloway Picts Project*. Available at <http://gallowaypicts.com/wordpress/results/laser-scan-survey-of-pictish-inscription/> [03/15, 2015].
- THE SCAPE TRUST, *Wemyss Caves 4D*. Available at <http://www.4dwemysscaves.org/about.html> [03/15, 2015].
- THE VISIONARY CROSS, *The Visionary Cross Project* [Ruthwell and Bewcastle Crosses]. Available at <http://visionarycross.org/> [03/15, 2015].
- UNIVERSITY OF YORK, *The Heritage Jam*. Available at <http://www.heritagejam.org/jam-gallery/> [03/2015, 2015].