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Volume 148 (2018)

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List of abbreviations commonly used in the Proceedings

ADS	Archaeol	logy Dat	a Service

- AIA Association for Industrial Archaeology
- ALGAO Association of Local Government Archaeological Officers
 - BAR British Archaeological Reports
 - CBA Council for British Archaeology
 - CIfA Chartered Institute for Archaeologists
 - CSA Council for Scottish Archaeology (now Archaeology Scotland)
 - DES Discovery and Excavation in Scotland
 - DSR Data Structure Report
 - HER Historic Environment Record
 - HES Historic Environment Scotland
- HMSO Her Majesty's Stationery Office
- NMR National Monuments Record
- NMRS National Monuments Record Scotland
- NMS National Museums Scotland
 - OS Ordnance Survey
- OSA Old Statistical Account 1791–99
- RCAHMS Royal Commission on the Ancient and Historical Monuments of Scotland
 - SAIR Scottish Archaeological Internet Reports
 - SMR Sites and Monuments Record

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The Society of Antiquaries of Scotland was founded 18 December 1780 and incorporated by Royal Charter 6 May 1783

It is a registered Scottish Charity No SC010440

LAWS OF THE SOCIETY FROM 1 DECEMBER 2014

- 1. The purpose of this Society shall be the study of the ANTIQUITIES AND HISTORY OF SCOTLAND, more especially by means of Archaeological Research.
- 2. The Society shall consist of Fellows and Honorary Fellows.
- 3. Candidates for admission as Fellows must sign the Form of Application prescribed by the Council, and must be sponsored by two Fellows. Admission shall be by ballot. In the case of candidates not able to obtain two sponsor Fellows, it shall be open to the Council after consideration of the circumstances and credentials of the candidate concerned, to waive the necessity for two sponsors from among the Fellowship.
- 4. Council shall cause the names of the Candidates and their Sponsors to be circulated to all Fellows at least ten days before the date of the meeting at which a ballot is to be held. Fellows may vote against any candidate by striking out the name from the list and returning the list to the Society before the meeting or placing the list in the Ballot Box before the meeting commences. Candidates receiving ten or more adverse votes will be balloted for individually at the meeting, and any candidate then receiving less than two-thirds of the votes shall not be admitted.
- 5. Honorary Fellows shall consist of persons eminent in any branch of antiquarian study, who must be recommended by the Council and elected in the same way as Fellows; they shall not be liable for any fee for admission or annual subscription. The number of Honorary Fellows shall not exceed 25.
- 6. Before the name of a newly elected candidate is added to the list of Fellows, he or she shall pay to the funds of the Society an entrance fee and the current year's subscription as provided for by Law 7.
- 7. Rates of entrance fee and annual subscription shall be determined by the Council as required from time to time subject to the approval of the Society given at a General Meeting. The annual subscription shall become due on 1st July in each year for that year then beginning; and if any Fellow who has not compounded shall fail to pay the subscription for one year, due application having been made for payment, the Treasurer shall report the same to Council, by whose authority the name of the defaulter may be erased from the List of Fellows. Fellows whose membership has lapsed, and who wish to re-join the Society, may do so either (1) by payment of all arrears of subscription in which case they shall receive the relative volumes of the Proceedings, if still available or (2) on payment of the subscription for the current year and of the entrance fee.
- 8. Every Fellow not being in arrears of the annual subscription shall be entitled to receive the Proceedings of the Society in printed or electronic form from the date of election.

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- 9. None but Fellows shall vote or hold any office in the Society.
- 10. Subject to the Laws and to the control of the Society in General Meetings, the affairs of the Society shall be managed by a Council elected and appointed as hereinafter set forth. Eight members of the Council shall constitute a quorum, provided that number includes at least two Office-bearers and six elected members of Council.
- 11. The Council shall consist of at least eleven Fellows elected by the Society, the Chairman of the North-East Section *ex officio*, the Society representative of the National Museums Scotland (NMS) *ex officio* who is already a Fellow of the Society (nominated by the NMS Board of Trustees) and up to two co-opted persons appointed by the Council to fill a vacancy on the Council. The total number of members of the Council shall not exceed fifteen at any time.
- 12. The Office-bearers of the Council shall consist of a President, two Vice-Presidents and a Treasurer.
- 13. The President shall be elected for a period of up to three years and may stand for election as President for a second term, subject to Law 16 below. The Treasurer shall be elected for one year and, subject to Law 16 below, shall be eligible for re-election provided however that the term of office of the President and the Treasurer respectively may not exceed six years in total. The elections of the President and the Treasurer shall be by ballot at the Annual General Meetings upon a list issued by the Council for that purpose to the Fellows at least fourteen days before the meeting.
- 14. The Vice-Presidents shall be appointed by the Council from amongst the elected members of the Council. The Vice-Presidents shall be appointed for an initial term of up to three years and may be appointed for a further term of up to three years, subject to Law 16 below.
- 15. Elected members of the Council shall hold office as Council members for an initial term of up to three years. A retiring Member of the Council who has held office for one term shall be eligible for re-election as a member of the Council and, if so re-elected, shall hold office for a further term of up to three years. The election shall be by ballot at the Annual General Meeting upon a list issued by the Council for that purpose to the Fellows at least 14 days before the meeting.
- 16. A retiring member of the Council who has held office for two terms shall not be eligible for reelection as a member of the Council unless such re-election is as an Office-bearer of the Council, provided however that no person shall be eligible for re-election as a member of the Council in any circumstances if such re-election would result in that person's period of membership of the Council in any capacity exceeding nine years unless a period of at least two years has elapsed since the date of that person's previous retirement from the Council.
- 17. A co-opted member of the Council shall be eligible for election as a member of the Council in accordance with Law 15 at the next Annual General Meeting following their appointment as a co-opted member of the Council and shall vacate office at the conclusion of that Annual General Meeting if they are not elected as a member of the Council. Immediately following each Annual General Meeting, the Council may re-appoint under Law 11 any individual who, as a co-opted member of the Council, vacated office under this Law at the conclusion of an Annual General Meeting; the Council may alternatively appoint someone in their place or resolve not to fill the vacancy.
- 18. Vacancies among the elected members of Council, the President and the Treasurer occurring by completion of term of office, by resignation, death or otherwise shall be filled by election at the

Annual General Meeting, or, in the case of the Treasurer, at any earlier meeting of the Society as decided by the Council.

- 19. The Council may appoint committees or individuals to advise on the Society's business. Individuals who are not Fellows and Fellows who are not members of the Council shall be eligible for these duties.
- 20. The Annual General Meeting of the Society shall take place on St Andrew's Day, 30th November, or on the preceding or the following day if the 30th be a Sunday. The business of the Annual General Meeting shall be notified to Fellows at least fourteen days before the day of the meeting.
- 21. The Council shall have the power to call Extraordinary General Meetings when they see cause. At least fourteen days' notice of an Extraordinary General Meeting shall be given to Fellows.
- 22. Meetings of the Society, termed Ordinary Meetings, shall be held on such dates and at such places as may be determined by the Council. A minimum of six meetings, in addition to the Annual General Meeting provided for in Law 20, shall be held in each year.
- 23. Every proposal for altering the Laws must be made through the Council, which shall cause intimation thereof to be made to all the Fellows at least thirty days before the General Meeting at which it is to be determined on.

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Obituary

Professor Roger James Mercer

12 September 1944 – 3 December 2018

Roger Mercer, President of the Society (2005– 8) and previously its Treasurer for ten years to 1987 and a Vice-President (1989–92), died at his home in Duddingston in December 2018. Aside from a six-year period shortly after graduating when he worked in England for the Inspectorate of Ancient Monuments, then based in London's Savile Row, he was to spend his entire professional life in Edinburgh, first – from 1974 – as a member of staff of the University and then, from 1990 to 2004, as Secretary of the Royal Commission on the Ancient and Historical Monuments of Scotland, a body whose work was combined with that of Historic Scotland in 2015 to create Historic Environment Scotland (HES).



Roger Mercer as President of this Society © Society of Antiquaries of Scotland

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On retirement he continued to live in his adopted city, where he remained active in archaeology. His major report of one of his later field projects – in Eskdale, Dumfriesshire – was recently published by this Society, and he lectured on his findings and their wider implications in Edinburgh and Dumfries to Society audiences in the weeks before his death.

Roger James Mercer was born in 1944 to Patricia and Alan, a draughtsman for De Havilland. Brought up in north-west London, he survived early ejection from his pram by a V2 rocket blast. A youthful interest in archaeology, encouraged by his grandfather's flint collection, led to participation in a wide range of excavations as a schoolboy. This only increased his interest in a subject which seemed to his father to offer little scope for making a living.

At his grammar school, he preferred the Combined Cadet Force to rugby, and later as a student his organisational skills were honed by a TAVR commission, from 1968 as a Second Lieutenant in the Royal Scots. He was to remain on the Regular Army Reserve of Officers into his mid-fifties; and the soldier's way of getting things done was never to desert him when he was called on to organise all manner of projects in the field or in terms of administration.

By 1963 Roger had ventured north from the London suburbs to study archaeology in Professor Stuart Piggott's department at the University of Edinburgh. In later life he was never quite sure why he had chosen to come to a city and university that were then very different from what they later became. Aside from the teaching programme delivered by Piggott and Charles Thomas, his archaeological skills were further enhanced by vacation fieldwork across Britain – from Wiltshire (with Edwina Proudfoot) to Ardwall Island in Galloway. He was also able to undertake study visits as far afield as Sweden and Yugoslavia, made possible by the local authority grants then available and by his Army bounty, as he gratefully acknowledged. On graduation he stayed in Edinburgh and embarked on doctoral research work on Bronze Age spearheads but, while weaponry and warfare were to remain career-long research interests, the thesis was in effect to be set aside in favour of direct involvement in field archaeology.

His career as an excavation director began in 1968, at Stannon Down on Bodmin Moor in Cornwall. A speculative letter to the Ministry of Public Buildings and Works in London saw the new graduate recruited at the last minute as the replacement director of a project which - as was then common - was staffed by volunteers and local labourers. The latter group was perplexed by the absence of artefact finds in an upland environment marked by a palimpsest of field and other boundaries, roundhouse sites and a scatter of other monuments of kinds that were repeatedly to attract Roger's interest through his career. It was symptomatic of even state-funded field archaeology in those very different days when so little survey equipment was provided that recording the successful outcomes of the project, duly reported in print, was particularly testing.

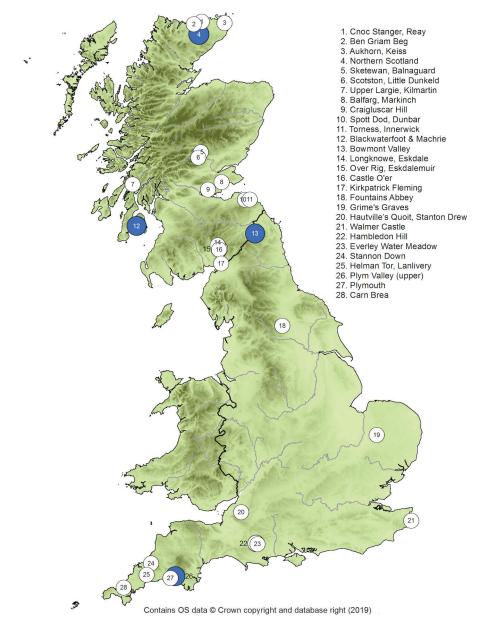
Appointed an Assistant Inspector of Ancient Monuments in 1969, he was at first responsible for south-west England. There he also undertook important excavations, including from 1970 on the tor at Carn Brea, near Redruth, a multi-period site - then without ready parallel - which was demonstrated to have extensive evidence of enclosed Neolithic settlement, but also - from the number of arrowheads recovered - to have undergone an attack during this period. This work, continuing in the field until 1973, was supported by the Cornwall Archaeological Society and fully reported in its journal. As he rose in the Inspectorate he was tasked with renewed excavation, which he conducted with military precision, at an intact shaft within the Grime's Graves flint mines in Norfolk. A visiting royal party had to descend the ladder into the shaft by order of precedence, then regroup and re-emerge in the same order, much to Roger's amusement. The recovered materials at Grime's Graves included a wealth of environmental evidence and half a million flint items, in due course published in 1981 with much assistance from another future President of this Society, the late Alan Saville.

By the time he applied successfully for a lectureship at the University of Edinburgh in 1974, fieldwork had begun on another enclosed Neolithic settlement, Hambledon Hill in Dorset, which was to be central to his research for many years thereafter. As had been the case in the Inspectorate, on campus too his energy and enthusiasm were readily visible, not only in his lectures - illustrated by formidable numbers of 35mm slides – but in his unstinting commitment to excavation and survey exercises, undertaken out of term time and which were to continue at Easter and over the summer throughout this second stage of his career. His students well remember him striding over a variety of – generally upland - landscapes in bonnet, army fatigues and with his walking stick to hand to cajole and encourage them, whatever the weather.

Over his 16-year tenure (promoted to Reader in 1982, he was thereafter the acting head of department until 1987) he was to continue research in south-west England, including the major multi-season excavations at Hambledon Hill, again fully published with his colleague Frances Healy once he had retired from other duties. If, during his university years, there were to be new projects undertaken in England, such as exploratory work at a second enclosed Neolithic settlement at Helman Tor in Cornwall and field survey in the upper Plym valley of Devon, he was later to become fully committed to fieldwork in Scotland, which became his primary focus and where his projects ranged geographically from Dumfriesshire to Arran to the northern Highlands, including - from 1976 - a 13-year survey programme, staffed by his students, in Caithness and neighbouring sectors of Sutherland, much of it published in Departmental Occasional Papers. This was a period when rescue archaeology, responding to natural change and adverse human effects, was coming to the fore. In the mid-1970s his surveys of the land to be taken over for the Torness nuclear power station in East Lothian, as well as of a tract identified for future afforestation on Arran, were among the most pioneering operations of this kind in this country. The Northern Scottish surveys - they too were in some cases pre-afforestation undertakings are, as exercises substantially undertaken in the field by undergraduates, without parallel in their scale. Figure 1 of *Occasional Paper* 11 maps the areas of Caithness and, to a lesser extent, Sutherland that had been examined by the end of the 1983 season, while the survey method and objectives were set out succinctly by Roger in the opening chapter of *Occasional Paper* 4. Over these exercises, hundreds of monuments, some of new types and others of categories which had not previously attracted the attention they deserved, were planned, described and accurately mapped, long before the days of global positioning systems.

From his university base, Roger was thereafter to play central roles in various aspects of the development of applied archaeology. This included early active involvement in what has now become the Chartered Institute for Archaeologists, as well as, within the University of Edinburgh and aided by Professor Eric Fernie (then Watson Gordon Professor of Fine Art), the establishment of a highly innovative MSc curriculum in Cultural Resource Management Studies devised and delivered with considerable support from Historic Scotland and English Heritage, among other external bodies. By 1989, just before his appointment to the Royal Commission, he became involved in the initial consideration of archaeological resources within the new development of environmental assessment in regard to the planning of Shell Chemicals' ethylene pipeline south from Grangemouth to the border and on Stanlow in Cheshire.

Several of his major projects in Scotland have seen definitive publication through this Society's outlets. They enjoyed substantial support from the predecessor bodies of Historic Environment Scotland, not only in the field but also in the post-excavation stages, when Roger's university office in George Square frequently housed one or more research assistants helping to progress these reports (and those of his survey programmes). The accompanying map, and consultation of the bibliography below, indicate the exceptional breadth of his interests and involvement; only a small selection from these projects can be mentioned even in outline here. Excavations began at Long Knowe in 4 SOCIETY OF ANTIQUARIES OF SCOTLAND, 2018



Map of Britain showing Roger Mercer's field projects, both survey and excavation, from 1968 to 1990. Prepared by Dr Paula Levick

Eskdalemuir in 1976, on an enclosed settlement that had already been damaged by forestry ploughing, but where a complex sequence of later prehistoric ring groove house plans were recognised. In the mid-1980s Roger returned to the Upper Esk valley to excavate on a total scale at a most unusual (both from its siting and contents) enclosure at Over Rig, and, much more modestly, at the hillfort of Castle O'er and its outer earthworks. It was this work which ultimately led to his 2018 monograph and his recent lectures to the Society, which ranged widely over the meaning of the results he had obtained in the field. The discussion chapters illustrate Roger at his expansive best – building, for example, on the auditory possibilities of Over Rig, with its ritual connotations and parallels, as a possible meeting place in the early centuries AD. In the case of Castle O'er, with the support of a few radiocarbon determinations intimating the use of the site over perhaps a millennium straddling the change of era, he was able to theorise on the enclosure sequence (here, from palisade to stony dump rampart with external ditch and counterscarp) in later prehistory, and on the function of the annexes as livestock corrals potentially related to the supply of cattle (and perhaps ponies) to the Roman army. Localised, timber-laced, refortification of a gateway and its destruction by fire leading to its vitrification allowed him to review the evidence across Scotland for that phenomenon.

His two major forays into Scotland's earlier prehistory as an excavator were at Balfarg, now within Glenrothes, Fife, in 1977-8 and, ten years later, at Sketewan in Perthshire, where he worked in conjunction with the late Magdalena Midgley, one of his former doctoral students, who subsequently replaced him on the staff of the University of Edinburgh Archaeology Department. Sketewan, examined in advance of its destruction in agricultural improvements, necessitated the teasing-out of a complex sequence of pyre and cist-building events, thereafter surrounded by a well-built ring cairn that was subsequently infilled, largely within the Early Bronze Age. In a sense, Balfarg is a monument to his work there, for after its conclusion Glenrothes Development Corporation decided to leave the site as open green space within its housing provision. Known since 1947 as a cropmark, the site was already substantially degraded when total excavation began. Nonetheless, a very substantial palimpsest of internal features was identified and allocated. after considerable analysis, to one substantial circle of timber posts of varying dimensions, a number of lesser circles of post holes, possibly indicative of scantling, and, more doubtfully, the former existence of two stone circles. A final action on site had been marked by the digging of a substantial pit, and the placing in it of a young adult accompanied by a flint knife and a fine example of a handled beaker. The Balfarg henge now forms an important element of a complex of Neolithic to Early Bronze Age sites on the margins of Glenrothes, including the nearby Riding School site and the stone circle at Balbirnie. Only rarely did a project not deliver what Roger had hoped for: one case was an intermittent cropmark at Spott Dod, East Lothian, which proved to be a later Prehistoric enclosure rather than a – first – Scottish example of a Neolithic causewayed camp, a class of monument on which Roger was to write an excellent introductory Shire guide.

One final and highly unusual project cannot be omitted. This is the anatomy of the parish of Kirkpatrick Fleming in Dumfries and Galloway, made possible by the bequest of Ms Ann Hill to the Dumfriesshire and Galloway Natural History and Antiquarian Society and managed by Roger to its publication in 1997. With contributions from numerous Royal Commission and other colleagues, notably Harry Gordon Slade on the standing buildings, this minutely detailed study is again a testimony to focused survey. This illustrated account is very different from the northern Scotland contributions, but again provides a valuable and unparalleled record and contribution to knowledge.

A very competent field archaeologist, Roger was also conscious that an army marches on its stomach. Catering (sometimes prepared by his wife Susan, whose honeymoon was at Carn Brea) for the volunteers on his field projects was always exemplary, although the living conditions were, on occasion, rather more basic. In terms of his programme of spring field surveys, staffed largely by students and undertaken - importantly - before bracken growth began, he was able to convince the finance staff of SDD (Ancient Monuments) as it then was - that their standard subsistence rate was insufficient in relation to the Caithness climate: modest hotel accommodation was agreed, an arrangement from which other field teams thereafter benefitted.

From his academic post, Roger published and lectured widely on British prehistory, on

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Prehistoric warfare, the importance of universitybased archaeology and on field survey. In 1990, beginning to be a little irked by aspects of the changing culture of universities, he was offered what he saw as 'the best job in the world': leading the Royal Commission on the Ancient and Historical Monuments of Scotland. The Commission had been changing its approach to survey since the late 1970s. While the slow and meticulous surveys associated with the County Inventories continued, there was a demand from the sector for more rapid survey and, in 1977, a new team was recruited to a project run jointly with the Society of Antiquaries of Scotland. Roger was actively involved in the growing archaeology sector calling for such change through conferences and meetings of the day. His active involvement in field survey, particularly the pre-afforestation surveys, with rapid recording and production of results made him an appealing choice for Commissioners as their next Secretary.

When he joined the Commission, Roger felt he was viewed as 'an outsider' in a culture that had a strong family feel, and he was regarded cautiously by staff who prided themselves on their professionalism and who knew his survey methods relied on an army of students with limited experience and on subsistence pay. Roger regarded this as a challenge, enabling him, as instructed by the Commissioners, to take a fresh look at the Programmes of Work. He was also instructed to 'improve the managerial performance, get a grip of the finances, carry out a programme of computerisation and raise the public profile'. Clearly a great deal of change was required! There was no question of Roger's commitment to an organisation that he admired for its field expertise, its scholarship and endeavour, its history and legacy, but which he could clearly see would not survive unless it modernised its approach and better served its constituency of 'stakeholders'.

He started his role in 1990 with three major changes.

First, the delivery of a revised Royal Warrant, which gave a new mandate for the work of RCAHMS, and, for the first time, acknowledged the role of the National Monuments Record of Scotland (NMRS) as an important repository of information on the historic environment.

Second, the growth of the collections and their inadequate storage facilities had become of major concern. Roger helped to secure the new premises at Bernard Terrace, ensured that they were adequately specified and took great delight in attending the 'topping out' ceremony, which allowed him to wear a hard hat for the photograph. The Commission moved into the new premises in 1992. John Sinclair House was aptly named by Roger to commemorate John Sinclair, the former Secretary of State for Scotland, himself a strong devotee of Scottish culture, who, in 1908, made the decision to appoint a Royal Commission on Ancient and Historical Monuments in Scotland.

Third, Roger tackled the complete reform of the financial management systems of RCAHMS, which he did with considerable energy. It was due to his financial nous and entrepreneurial skills that the Commission was able to accept additional responsibilities, such as taking on the Air Photographic Unit from the Scottish Office, and the responsibility for recording Scotland's Maritime Heritage, both of which arrived during his tenure with no additional injections of cash, but were activities that Roger saw as important additions to the Commission's portfolio.

Of great help in making the budget stretch was the work that Roger and the Commissioners did to achieve Charitable Status for RCAHMS in 1997. This not only helped the finances, but also had the effect of shifting the focus of the organisation to reflect and concentrate on its charitable purposes, which included education and public access. It aligned very well with the charitable purposes of the other National Collections (The National Museum, The National Library, The National Gallery and The Royal Botanic Garden Edinburgh), with which Roger developed a very close relationship, and it provided the blueprint for HES when that body adopted responsibility for the Commission's activities in 2015.

But these organisational changes underpinned more fundamental change. Tasked by the Commissioners to take a fresh look at the programmes of work, Roger set about changing the whole focus of the Commission's raison

d'être from the publication of large imposing Inventories - published county by county since 1908 - to an online database. He laid out his reasoning for this change in a paper that he presented to the Commissioners and to the Society of Antiquaries at the beginning of his tenure in 1990, setting out his vision for 'The work of the RCAHMS at the end of the 20th century' (Annual Review 1991-2, RCAHMS 1992). 'Argyll 7, the last volume of the great series of County Inventories, the zenith of British Royal Commission Inventorisation, will be published later this year. The price will be £120 and it is already, in minor details, out of date. Such a process could not and will not continue. As a monument to the quality of Commission scholarship and endeavour it will stand for many years. But as an itemised record of a specific portion of the heritage it will never shine any brighter than on the day it is published.' He continued 'In that the NMRS is the subject of constant addition, reassessment and development, it is clear that the basic Inventory that needs to be compiled and maintained by the Commission is the National Monuments Record itself.' This essentially formed the basis of his leadership of new programmes of work that focused on a more rapid turnaround from fieldwork to publication and the availability of information to the public through the NMRS. This was revolutionary and, at the time, a brave move to make. Looking back, it was the only way forward and with the delivery of this Inventory online, through a web service called CANMORE, the change was complete.

But in 1990, the Commission was obliged to use the mainframe computer operated by The Scottish Office to house its data. In the days before the Internet this involved laboriously transporting discs holding digital data to and fro. It could not be said that Roger was particularly computer literate, but he could see the importance of computerisation to the organisation, and, more importantly, he realised that this needed to be an integrated and co-ordinated effort across all elements of the Commission's work, to provide another of the building blocks required if RCAHMS was to change the focus of its work. The new building at Bernard Terrace provided the opportunity to build a computer network to serve the whole organisation and coincided with the Scottish Office withdrawing its mainframe services. How was the Commission to afford its own servers and associated equipment? Roger took an enormous risk by using the underspend from the building work at Bernard Terrace to pay for the new equipment. He records 'I sought permission from the sponsoring department to vire (ie transfer the funds for another purpose than that for which they had been allocated). No reply. The Nelsonian principle of "no signal seen indicates permission" was applied and RCAHMS' first computer base-plate was purchased. A terrible row followed from which we all seemed to emerge intact. I don't like to contemplate what would have happened if that lucky break had not occurred.' His account of this both underplays the risk he took to achieve what he considered to be a fundamental building block for the future and the reprimand that he managed to face down.

In 1990 hardly anyone had heard of the World Wide Web, but by 1998, CANMORE had not only been developed in-house, but was launched as the first online service of its kind in the UK (and possibly in the world), followed by CANMAP in 2001. The two were subsequently combined into the comprehensive service offered today. Roger also encouraged the introduction of cutting-edge technologies in field and aerial survey, and a move to digital photography and Computer Aided Drawing methodologies, which sped up data capture in the field and in the production of results.

These developments freed up a new approach to publication. Roger's view was that 'it was essential to maintain a constant flow of publication that brings RCAHMS and its Archive and Database to academic and public attention'. There was now a series of technical volumes, studies of industrial sites, aerial survey catalogues and catalogues of archive collections. In addition, a series of broadsheets were produced, publishing information, maps, photographs and drawings on a two-sided foldout sheet, some of which were produced jointly with other organisations, as a way of sharing the cost and raising the public profile. More substantial publications were not neglected, but became more research-based, synthesising and describing the material thematically, rather than providing a published description of each site, which was by then incorporated into the NMRS. *South East Perth: An Archaeological Landscape* (1994) is an example of this new style, but even though it was published with a soft cover and all the illustrations were in black and white, Her Majesty's Stationery Office still published the volume at £40, putting Roger's efforts to produce more accessible and cheaper in-house style publications in perspective.

Two other programmes of work are worth mentioning because they were new ways of working and required considerable vision and long-term commitment; tasks perhaps only the RCAHMS, with its long-term view of recording the historic environment, could contemplate. Roger welcomed Historic Scotland's partnership for these desk-based projects.

The First Edition Survey Project, which ran from 1997-2002, added some 22,000 medieval and later rural sites to the NMRS record, a type of monument that had previously been omitted from the Inventories, while The Historic Landuse Assessment (HLA) Project, which started in 1996, was only completed in 2015. Using the power of interactive GIS, this latter provides the most comprehensive analysis of the historic landscape in Scotland ever undertaken. Roger's vision, that the HLA map would provide a 'contextually sensitive background' for other data has been fully realised and a detailed analysis and account of this work has now been published: Watson, F and Dixon, P A History of Scotland's Landscapes (HES 2018).

No account of his stewardship of RCAHMS would be complete without mention of his achievement of National Collection status for the large and burgeoning archive. This recognition brought its importance in line with the other National Collections. The first HLF grant that RCAHMS successfully achieved was to fund a project to house and catalogue 150,000 architectural drawings, mostly from Scottish practices. Among the collection there were some drawings from outwith Scotland, and Roger was delighted to find sketch designs for the De Havilland factory in Hertfordshire, where his father had worked, a framed copy of which was presented to him on his retirement.

Shortly after he was appointed, in 1992, he gave a paper to the Society of Antiquaries of Scotland, setting out his vision for RCAHMS as it reached the end of the 20th century, and in 2004, in his final report to the Commissioners, in characteristic style, he measured his success against that vision. He had achieved all that he set out to do – and more.

It is not possible here to cover all programmes of work that Roger led during his period as Secretary at RCAHMS, but his work was prodigious and far reaching. He realised his objective to develop RCAHMS into a modern, forward-facing organisation that met the needs of its many users. His progress in that regard is charted in the Annual Reports that started with his tenure in 1991 and provide a fuller guide to his achievements. A full list of publications that were produced from 1990–2004 can be found in the final report of RCAHMS *An Inventory for the Nation* (RCAHMS 2015).

He was immensely proud of the legacy of the Commission which endures in the archive, maintained now by Historic Environment Scotland.

Roger and his wife Susan (née Fowlie), whom he married in 1970, made Duddingston their home and brought up their children, Katherine and Andrew, there. All three survive him. Elected Fellow of the Royal Society of Edinburgh (1995), he was awarded an OBE for services to archaeology (2004) and was made an Honorary Fellow of this Society in 2012, a few years after completing his Presidency. For 13 years to 2002 he was a member of the Ancient Monuments Board for Scotland. In 1995 he was appointed to an Honorary Chair, which he held for some ten years, at Durham University. In retirement Roger remained active, still lecturing at his old university - where he was an honorary professorial fellow - in the months before his death. A major achievement was his oversight, as Chair of the Steering Committee, of the sizeable collective endeavour which resulted in the online publication of the Scottish Archaeological Research Framework in 2012.

A slightly larger-than-life character with wide interests in art, architecture, literature and music, among other things, Roger had a rich fund of archaeological and other stories he was wont to mildly embroider. All of this made him an entertaining and informative companion. His good humour and readiness to share his wide knowledge will be much missed.

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DIANA MURRAY and IAN RALSTON

Neolithic pits and Late Bronze Age roundhouses in the Upper Ury Valley, Aberdeenshire

Claire Lingard¹ and Richard Moore¹

with contributions by Melanie Johnson², Ann Clarke³, Mhairi Hastie², Mike Cressey², Gemma Cruickshanks⁴ and Derek Hamilton⁵ with illustrations by Jacqueline Churchill and David Watt

ABSTRACT

Archaeological monitoring of works on a gas pipeline route in Aberdeenshire, north-west of Inverurie, resulted in the discovery and excavation of several groups of Neolithic pits and four Bronze Age roundhouses. The Neolithic pits were concentrated around the Shevock Burn, a small tributary of the Ury, and in the East and North Lediken areas to the north. They produced significant assemblages of Early Neolithic Impressed Ware and of Modified Carinated Bowl. The Bronze Age roundhouses included the heavily truncated remains of a post-built structure near Pitmachie, the remains of a pair of ring ditch structures near Little Lediken Farm and another ring ditch structure close to Wrangham village.

INTRODUCTION

The 8.7km route of the Moray Reinforcement Pipeline (Illus 1) forms part of a larger scheme to improve natural gas distribution in north-east Scotland. It continues the route of an existing pipeline from Broadsea (NGR: NJ 7062 2111) to Old Rayne (NGR: NJ 6714 2777) (Kirby 2011) northwards to the small settlement of Jericho, north-west of Colpy. A staged programme of pre-construction studies, including a desk-based assessment, fieldwalking and geophysical surveys, carried out in 2010, covered both routes, from Broadsea to Jericho (Morley 2010).

Archaeological monitoring of topsoil removal from an 18.5m-wide working width along the length of the pipeline led to the identification of archaeological remains in 17 plots of land, of which 12 were designated as notification areas requiring further investigations. These were excavated and recorded between 24 February and 20 June 2016.

LANDSCAPE

The pipeline route broadly follows the west side of the Ury Valley, to the west of the A96 Aberdeen to Inverness road. At its southern end, the route is at 93m OD, and it rises gradually up the valley side, with dips across the small side valleys of the Shevock, Kellock and Jordan Burns. The route terminates at a gas compound on the western slopes of the Hill of Skares, at a height of 265m OD. It crosses a mix of arable and pasture fields, but the wider landscape has a greater upland character towards the northern end of the route, with open moorland to the west and forestry plantations to the east.

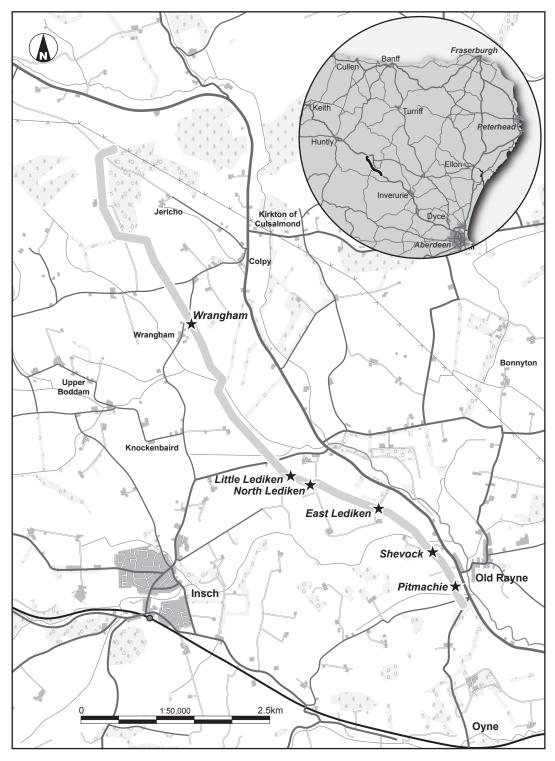
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ILLUS 1 The location of the excavated sites along the pipeline route (© Network Archaeology)

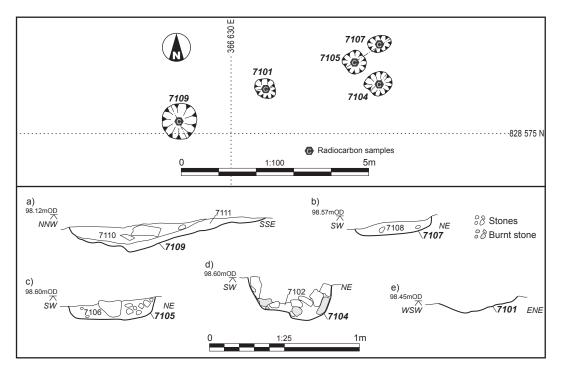
Ordovician igneous rocks underlie the route, outcropping towards the north, around Wrangham and the Hill of Skares. Elsewhere, the bedrock is masked by Devensian tills, of coarse silts with occasional thin layers of fractured rock, and granite boulders increasing in frequency to the north. The National Soil Map of Scotland shows brown earths of the Insch Association overlying the tills.

METHODS

Topsoil was stripped along the whole length of the pipeline route, using back-acting tracked excavators with smooth-faced buckets. This was monitored throughout by an experienced archaeologist. A notification procedure facilitated the rapid deployment of an excavation team to hand excavate and record all remains that were too complex to be recorded by the monitoring archaeologist. Sites were located to OS National Grid co-ordinates using dGPS, with a positional accuracy of ± 20 mm. After planning, features were excavated and recorded in crosssection. All fills of archaeological features were sampled, and were then totally excavated, before pipeline construction work proceeded.

Specialist analyses of artefacts and samples, as proposed in the data structure report (Cruse 2017), have been integrated into this text. The unedited reports by Melanie Johnson (pottery), Ann Clarke (flaked lithics and stone tools), Mhairi Hastie (archaeobotany), Mike Cressey (charcoal) and Gemma Cruickshanks (vitrified materials), included in the site archive, provide details of methods employed by each of the specialist contributors, summaries of which are included in this paper.

To avoid undue repetition, radiocarbon dates quoted in this paper are calibrated at the 95% confidence level, unless otherwise stated. Full details of all radiocarbon dates are listed in the Appendix.



ILLUS 2 Shevock: plan and sections of pit group (© Network Archaeology)

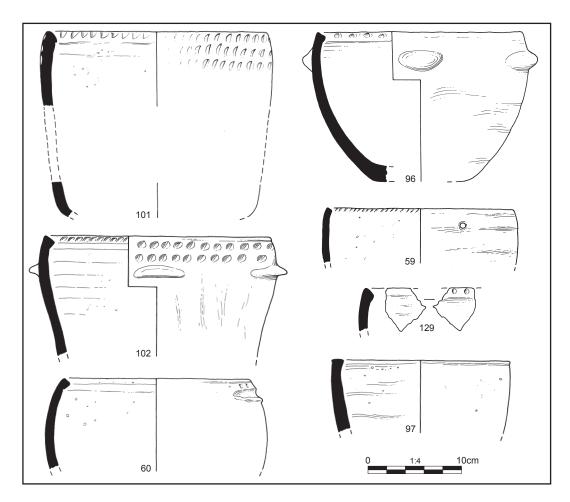
EARLY NEOLITHIC PITS

SHEVOCK: PIT GROUP (NGR: NJ 66630 28575; ILLUS 2)

All five of a group of shallow pits, located 50m to the south of the Shevock Burn, contained pottery sherds. Their fills were soft silty sand with varying quantities of charcoal, interpreted as the result of either burning in situ or dumping of hearth waste. Large and well-preserved assemblages of burnt hazelnut shell were recovered, particularly from Pits 7104, 7105 and 7107, and provided radiocarbon dates for four of the features, with hazel roundwood charcoal providing a sample for the fifth: Pit 7109. Pit 7104, the deepest of the group, produced sherds from four diagnostic vessels (Illus 3), with a further six vessels represented by 53 undecorated body sherds.

Vessels P58 (not illustrated) and P59 are each represented by a single rim sherd, both internally bevelled: P58 is decorated with small impressed marks along the bevel, while P59 has short diagonal notches along the bevel and a perforation below the rim, drilled from the exterior.

Vessel P60 consists of 17 sherds from a vessel with an inturning rim, with an internal bevel and a rounded body; the rim is pinched below the bevel on the interior and the vessel is



ILLUS 3 Shevock: Neolithic pottery (© Network Archaeology)

decorated on the exterior with a large horizontal slash, pinched along the bottom edge to create a ridge, with possible fingernail impressions above.

Vessel P96 consists of 37 sherds, including rim and base sherds, from a heavy bowl with lugs; its rim is internally bevelled and the base is flat. It is decorated with fingernail impressions along the bevel and there are two elongated lugs present immediately below the rim.

Two rim sherds from the largest pit, 7109, are from a vessel (P97) with an upright, flattened rim, slightly expanded to each side and decorated with incised diagonal lines.

The fill of Pit 7101 consisted mostly of pot sherds in a loose, silty matrix, 7103. Three diagnostic vessels were present, with a further six vessels represented by 140 undecorated body sherds.

Vessel P99 (not illustrated) comprises three very abraded sherds from a thick rim with an internal bevel, decorated with deep fingernail impressions along the bevel and in a diagonal row below the rim. There is little profile present so the overall form of the vessel is not known.

P101 consists of 180 sherds from a vessel with a slightly inturning rim, with internal bevel and a rounded body. Three of the sherds may be from either a carination or the base. It has three rows of deep fingernail impressions below the rim and one row along the bevel.

P102 consists of 52 sherds from a vessel with an inturning rim with internal bevel, decorated with two rows of deep fingernail impressions below the rim, and one row along the bevel, where they become more pinched. Two elongated lugs are present immediately below the rim.

Of the two shallower pits to the north of Pit 7104, Pit 7105 contained sherds from three different vessels, the only diagnostic one, P129, consisting of an inturning rim with its internal bevel decorated with deep fingernail impressions. Pit 7107 contained only eight undecorated body sherds.

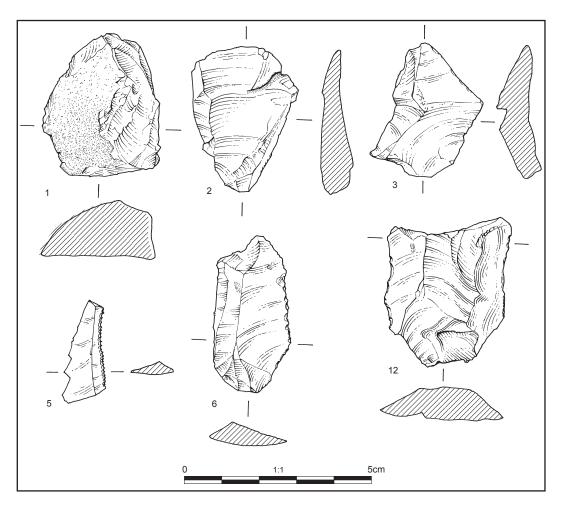
Overall, rim diameters for vessels in this pit group range from 18 to 22cm, and fabrics are generally very similar, coarse and sandy and tending to be orange/brown in colour, with wall thicknesses ranging from 6 to 14mm.

The large portions of individual vessels recovered from Pits 7101 (P101, P102) and 7104 (P60, P96) form a coherent group: all are Impressed Ware, their internally bevelled rim forms, lugs and impressed decoration being typical traits. This strongly indicates that these two features are related and represent pit-digging activity in the 4th millennium BC.

However, Bayesian modelling of the radiocarbon dates from all five features indicates that the group as a whole does not represent a very short-lived nor a single event despite the physical proximity of the pits (see Appendix). Use of the same area for pit-digging activity on two or more occasions could be purely coincidental, but raises the possibility that this location may have maintained a special significance over an extended period.

An isolated round pit, 7112 (not illustrated), in the same field, but over 60m to the south-east (NGR: NJ 66684 28536), was 0.60m in diameter and 0.1m deep, with a fill of large angular stones in a loose sandy silt matrix. Four of the stones showed heat-reddening. Five worked flints, recovered from beneath the stones, include two flakes and a core from what appears to be the same mottled grey flint. Remnants of a rolled cortical surface on the back of the core indicate a beach or gravel source for this flint (Illus 4: 1). The flakes (Illus 4: 2, 3) do not refit to each other or to the core but they are so similar in colour and texture, and share the same technique of flint working, that it is likely that they originated from the same nodule.

The rough Levallois-like flat core has a backing of pebble cortex. The two large inner flakes have dihedral platforms indicating they were detached from a faceted platform (see Anderson-Whymark 2017 and Ballin 2011 for explanation of this technique). Anderson-Whymark observes that this method of working is exclusive to Scotland and dates to the Late Neolithic. Across Britain during this period it was not uncommon for pits to be filled with flaked lithics, some coming from the same episode of flint working (Edmonds 1995; Thomas & Anderson-Whymark 2011).



ILLUS 4 Shevock, East Lediken and Little Lediken: flints (© Network Archaeology)

The two other simple inner flakes of light grey and light brown flint both have narrow platforms.

The same field also produced an intriguing unstratified piece, found 104m to the southwest of the pit group (NGR: NJ 66703 28500): a fragment of deeply incised purple roofing slate with a carved symmetrical pattern of a circle bisected by two quadrants (Illus 14: 4, below). Lighter hashed lines fill the outer corners of the quadrants. The object is incomplete, having broken along the outer incised lines, so its original size is not known. The use of a purple roofing slate would give a historic date for the motif.

EARLY NEOLITHIC IMPRESSED WARE

Melanie Johnson

It is typical for Neolithic Impressed Ware to be recovered from pit scatters, and the ware is characterised by impressed decoration ('maggots', comb, fingernail, stabs) and bevelled rims (MacSween 2000, 2002, 2007). Impressed Ware has previously been understood as a development from the Carinated Bowl tradition, but it is becoming clear that Modified Carinated Bowl and Impressed Ware can be found together. Although previously characterised as Late Neolithic, dating to the early to mid-3rd millennium BC (McInnes 1969; Kinnes 1986; Cowie 1994), the Shevock evidence adds to a growing corpus of dates that indicate that Impressed Ware is found on sites dating to the second half of the 4th millennium BC. For example, the radiocarbon dates from a feature at Grantown Road, Forres (McLaren 2016: 29), containing sherds from a lugged vessel, a roundbodied bowl and the rim of an Impressed Ware vessel, support a period of currency of 3635– 3119 BC.

Excavations at Kintore, Aberdeenshire, gave a date range from 3530–3340 BC (Cook & Dunbar 2008), and the Dubton Farm, Brechin, assemblage (Cameron 2002) included Carinated Bowl and Impressed Ware found together in pits with a date of 3639-3374 BC. Impressed Ware from Alloa (Mitchell et al 2010) came from the same pit as radiocarbon dates of 3370-3100 BC. Sheridan (1998) also suggested at Biggar Common, South Lanarkshire, that an earlier date in the 4th millennium was possible, as did Strachan et al (1999) at Amisfield, Dumfries and Galloway. Strong regional groups have still not been identified within Impressed Ware assemblages, although some indications of regional patterning have been suggested (MacSween 2002, 2007).

The pottery from Shevock includes roundbased bowls with upright and inturning bevelled rims, a bowl with an upright flattened rim and a heavy bowl with lugs which appears to have a flat base. The presence of lugs on two vessels along with an example of a perforation suggests continuity from the Modified Carinated Bowl tradition rather than a mixed assemblage of Impressed Ware and Carinated Bowl, as the lugs are paired in each case with impressed fingernail decoration. Fingernail impressions are recorded on a number of the vessels, in parallel rows on the rim bevels and on the exterior of the pot. Other decoration present in the Shevock assemblage includes an unusual large horizontal slash, which is pinched along the bottom edge to create a ridge; diagonal notches and small impressed stabs along rim bevels; and short incised lines along the top of the flattened rim.

Parallels for fingernail impressions in Impressed Ware assemblages can be found in the vertical impressions arranged in horizontal rows at Hedderwick, East Lothian (Callander 1929: fig 51.1 and 2), and in the pinched fingernail impressions at Kenny's Cairn and Glenluce Sands, Galloway (Callander 1929: fig 51.4 and 5), and at Grandtully, Perthshire (Simpson & Coles 1991). The fingernail impressed vessels from Shevock possibly also fall into a group which includes the assemblage from Kinbeachie, Black Isle, Highland (Barclay et al 2002), in particular, the impressed corrugated decoration on V1 from that site which also has perforations. The Kinbeachie assemblage has been dated to the second half of the 4th millennium BC.

A vessel from Newton Road, Carnoustie, Angus (White et al 2009), had fingernail impressions and a lug, although its form is different; overall, the Newton Road assemblage had a small quantity of decorated vessels, considered at the time not to be typical of Impressed Wares but more likely to be examples of sporadically decorated Neolithic wares, as recognised by Cowie (1994). The Newton Road radiocarbon dates calibrate to 3700–3350 BC (White et al 2009), slightly earlier than the Shevock assemblage.

It appears that the assemblage from Shevock is early Impressed Ware, and possibly provides an example of the transition from the North-East Modified Carinated Bowl to Impressed Ware in the mid-to-late 4th millennium.

EAST LEDIKEN: SCATTERED PITS (NGR: NJ 66090 29000)

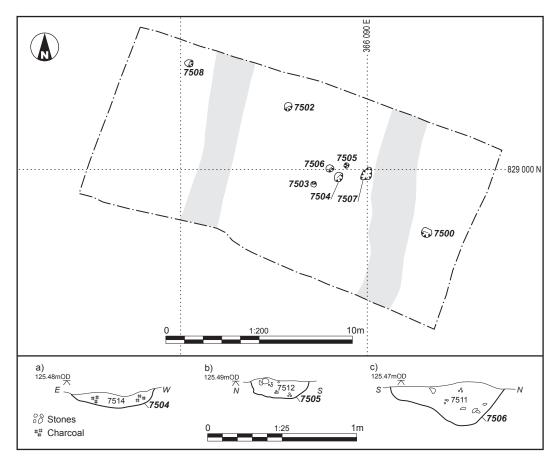
The ground rises quite steeply from the north bank of the Shevock Burn, before flattening out towards the access track to East Lediken farm. Fieldwalking in this area had recovered 14 struck flints, including a Levallois-like core (Ballin 2010), and topsoil stripping revealed widely scattered small and shallow round or oval pits on the sloping ground, and a more compact group of features beyond the top of the slope.

The easternmost feature in the group, shallow oval Pit 7408, 100m north of the burn (NGR: NJ 66451 28777), yielded eight sherds, including Vessel P4 with an upright, flat-topped rim (Illus 8). Paired Pits 7401 and 7402, part way up the slope (NGR: NJ 66371 28830), contained abraded sherds of Neolithic pottery, including two fragments of rim from Pit 7402, one rounded and the other internally bevelled (P134 and P6, neither illustrated); the remaining sherds from this feature were undecorated body sherds from two further vessels.

Pits 7401 and 7402 also produced Early Neolithic serrated flint blade fragments, along with charcoal and burnt bone. Radiocarbon determinations from Pits 7401 and 7402 were consistent with them having infilled at the same time (see Appendix) and the similarities of the serrated blades support this inference. Both blades are of a similar light grey, opaque flint, though one is a fragment from a fine blade (SF21: Pit 7402, Illus 4: 5) and the other is a broad blade, 20mm wide and 42mm long (SF22: Pit 7401, Illus 4: 6). The finer blade has regular serrations, at a spacing slightly less than 1mm, while the broad blade has much coarser serrations, subsequently damaged either by use or deposition. It also has a diagonal length of fine blunting edge retouch at the proximal end.

Blades are a common find in Early Neolithic pits across Scotland (see discussion in Gray & Suddaby 2010: 13), although it is not so common for them to be serrated: usually they are simple unretouched forms, some only slightly larger than the larger blade (SF22) from Pit 7401. The opaque grey East Lediken flint is rather different from the mottled grey and brown flint that is more common in the area and this might suggest a deliberate selection for colour, as was proposed for the blade made from a distinctive red flint at Hatton Farm (ibid).

Pit 7400, located 2m to the north of Pits 7401 and 7402, contained two pieces of worked



ILLUS 5 East Lediken: plan and sections of the western feature group (© Network Archaeology)

flint. Farther up the slope (NGR: NJ 66278 28900), a 3m-diameter shallow spread of silty sand, 7417, produced five Early Neolithic sherds (Illus 8: 69) and a flint flake, and 18m to the west (NGR: NJ 66259 28903) the more northerly of a pair of pits, 7413, contained a single flint flake. The flints from Pits 7400 and 7413, and Spread 7417, are simple unretouched flakes of brown flint.

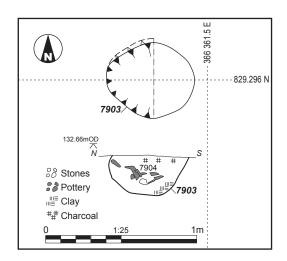
At the top of the slope, beyond an outcrop of coarsely fractured sandy shales, a loose cluster of seven shallow pits or truncated post holes were visible within a small area, along with remnant rig and furrow (Illus 5). Of the 78 sherds of pottery from this area, 62 were from a shallow pit, 7505. The stone-studded fill of this feature also included several heat-affected stones and a thin flat slab of sandstone, one of the narrow sides of which appears to have been used for smoothing or grinding, since the face is skewed and smooth and forms crisp edges against the other faces (Illus 14: 7). It is not an artefact that can be specifically dated but it is likely to be contemporary with the pottery from the same feature.

Three of the four vessels from Pit 7505 included rim sherds. Vessel P75 (Illus 8), of which a substantial portion was present, has an internally bevelled, upright rim with a slight neck and a gently rounded body; this was undecorated and had a rim diameter of 20cm. Vessel P12 has an expanded rim, which is flat-topped and slightly flaring. In the same pit were undecorated body sherds (P135, not illustrated) and a single upright rounded rim with a slight internal bevel (P76). Initially it was considered that P75 and P76 were Middle to Late Bronze Age in date, while P12 was Neolithic, but rather than the feature containing mixed material of different periods, it seems more likely that P75 and P76 are a form of plain Neolithic bowl. Indeed, internally bevelled upright rims form a component of the Neolithic assemblage at Newton Road, Carnoustie (White et al 2009).

Radiocarbon dates on a hazelnut shell from Pit 7505, together with those from Pits 7401 and 7402 (see Appendix), indicate that all three could be the same age but within a relatively broad 4thto early 3rd-century BC date range. Alongside Pit 7505, 14 further sherds were embedded in the surface of the till and in the base of the more easterly of the two furrows within the excavation area (Contexts 7500 and 7516 respectively). Rim sherds from Context 7516 were from a vessel with a flat-topped rim (P17) expanded to either side and slightly flaring, and from Context 7500 (P73) a slightly flaring rounded rim with a shoulder or carination visible. Both vessels are dated to the Early Neolithic. A single body sherd from Pit 7506 is also probably from the same period, based on its fabric. A single sherd (P13, not illustrated) was recovered from Pit 7507.

The topsoil in this area produced two flakes of mottled grey flint. A secondary flake has a section of light acute retouch along part of one edge: this might indicate an Early Prehistoric date, perhaps Late Mesolithic or Early Neolithic. The other flake is an inner fragment with a missing platform. Also from the topsoil, a segment of a coarse thick blade was most likely used as a strike-a-light as it retains coarse edge damage along one edge. It could date from the Late Bronze Age onwards.

Fragments of hazelnut shell were present in all of the processed soil samples from East Lediken, the largest concentrations in the fills of Pits 7401 and 7504. Otherwise, charred plant remains were limited to a small number of much



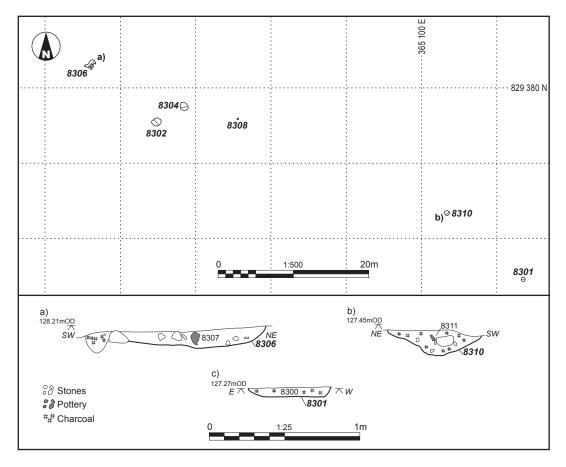
ILLUS 6 North Lediken: plan and section of Pit 7903 (© Network Archaeology)

abraded and fragmentary grains in Pit 7401, tentatively identified as barley (*Hordeum* sp) and wheat (*Triticum* sp).

NORTH LEDIKEN: PIT GROUPS

Around 800m to the west (NGR: NJ 65361 29296), towards the buildings of the former North Lediken Croft, a well-defined circular pit, 0.6m in diameter and 0.26m deep, had steep concave sides and a concave base (7903, Illus 6). Its fill of brown sandy silt, with clay lenses towards the base, contained occasional pieces of heat-affected quartzite. This appeared to be a relatively isolated feature, apart from a shallower and less well-defined pit (7902) 20m to the west.

Seventeen sherds of pottery from Pit 7903 represent eight separate vessels, five of which have diagnostic characteristics. Three of these have elongated lugs, including a heavy, roundbottomed bowl with inturned rim (Illus 8: P78), and a rim diameter of 20cm. One lug is present immediately below the external bevel of the rim; a scar shows the position of a second missing lug. A vessel with a rounded upright rim, perforated adjacent to the lug, was also decorated with a single incised line (P51). A lug, together with a body sherd from the same vessel (P20, not illustrated), no longer attached, was also recorded. Other vessels include a single rim sherd from a bowl (P23, not illustrated) and a single sherd from a slightly necked bevelled rim (P22). These vessels all date to the Early



ILLUS 7 North Lediken: plan and sections of pit group (© Network Archaeology)

Neolithic, most likely the second half of the 4th millennium.

A farther 250m west, to the north-west of North Lediken Croft, five discrete, circular or slightly oval pits and a smaller squarish feature were excavated along a 65m length of the pipeline (NGR: NJ 65134 29354 to NJ 65056 29383; Illus 7). All had similar coarse silty fills with charcoal inclusions. Heat-affected stones in the fills of the two largest pits, 8304 and 8302, suggest a use for cooking, and smaller pieces of burnt bone in Pit 8310 might imply a similar function. The small feature, 8308, was clearly defined by its dark fill, despite being no more than 4cm deep.

Three of these features contained pottery. Eight different vessels from Pit 8310 include a rounded inturning rim (P87) and a vessel with a flared rim with internal bevel (P90), both likely to be earlier Neolithic. The other vessels are represented only by plain body sherds. A radiocarbon date from a carbonised barley grain from the fill of Pit 8310 calibrates to 3635– 3380 BC.

Six plain undiagnostic body sherds from the easternmost feature in this group, Pit 8301, include one sherd that is burnished, likely to indicate an Early Neolithic date. A sample of hazel small roundwood charcoal gave a radiocarbon date that calibrates to 3339– 3027 BC.

Features 8301 and 8310 both contained more recent finds: a tiny copper alloy fragment, probably part of a pin shaft, and a fragment of modern glass, respectively. These finds are both small enough to have been intrusive, introduced into these shallow features by worm action, animal burrowing or root disturbance; nevertheless, they highlight the uncertainty inherent in interpreting the taphonomy of shallow discrete features and raise a degree of doubt as to the contemporaneity of the radiocarbon samples and the pottery.

The lower fill of the root-disturbed Pit 8306 contained 12 sherds of pottery, representing four different vessels, only one of which (P83) is diagnostic: an Early Neolithic Carinated Bowl, 24cm in diameter, with a flaring, rounded rim.

MODIFIED CARINATED BOWL

Melanie Johnson

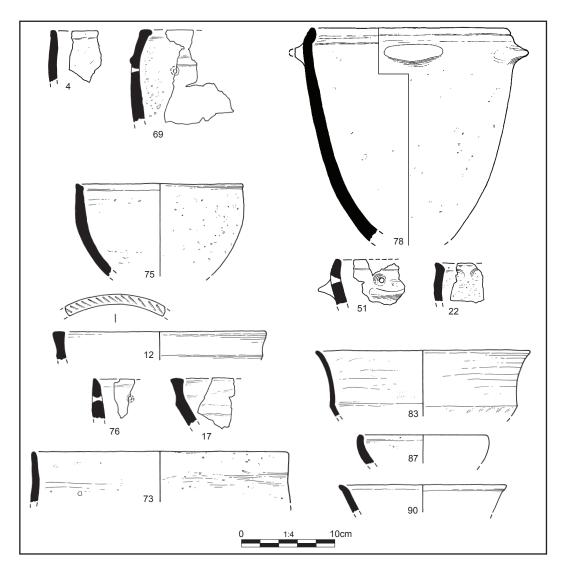
It is not unusual for activity during this period in Scotland to be largely represented by Neolithic pottery recovered from scatters of pits, and there are a number of local parallels such as Mosstodloch (Gray & Suddaby 2012) and Grantown Road, Forres (Cook 2016), both in Moray. As such, the pottery and features excavated at East Lediken and North Lediken are typical of the period.

The earliest type of Neolithic round-based pottery, known as 'traditional' Carinated Bowl, is generally accepted to belong within an early 4th-millennium BC context, with the appearance and use of this pottery dated to around 3950–3700 BC in Scotland (Sheridan 1995, 2003a, 2007, 2011; ScARF 2012). Regional variants, known as Modified Carinated Bowl, developed fairly early on (Sheridan 2007), including Henshall's (1983, 1985) North-East Style found across Aberdeenshire and Moray and into Caithness.

The Neolithic pottery from East Lediken and North Lediken is typical of Modified Carinated Bowl, with elements of the North-East Style present, including lugs and perforations, although fluting, another typical component of such assemblages, was not recorded.

While some of the known radiocarbon dates obtained for Modified Carinated Bowl assemblages are indistinguishable from 'traditional' Carinated Bowl, there is evidence to suggest that Modified Carinated Bowl continued in use until at least around 3600 BC (Sheridan 2003b). As more sites are excavated and dates obtained, it is becoming clear that it could continue as late as 3000 BC (Cameron 2002; Cook & Dunbar 2008; Cook 2016) – with a range of 3970–2880 BC for Kintore – and overlap with other types of Neolithic pottery, including Impressed Ware.

The associated radiocarbon dates lie broadly in the second half of the 4th millennium BC, those from East Lediken and one from North Lediken being very similar, at 3336–3014 BC, 3337–3027 BC and 3339–3027 BC respectively,



ILLUS 8 East Lediken and North Lediken: Neolithic pottery (© Network Archaeology)

and the other North Lediken sample seemingly slightly earlier, at 3635–3380 BC. Together, these dates support the theory that this pottery type continued in use through the second half of the 4th millennium BC.

The presence of lugs on vessels from North Lediken has parallels within Moray assemblages from Boghead, near Fochabers (Henshall 1985), and Easterton of Roseisle, near Elgin (Henshall 1983), and other north-east sites such as Midtown of Pitglassie, Aberdeenshire (Shepherd 1997); Deer's Den, Aberdeenshire (Alexander 2001); and Lesmurdie Road, near Elgin (Suddaby forthcoming). The lugs present in the assemblage from Feature 7903 were all elongated: elongated lugs on uncarinated bowls are known from Loanhead of Daviot and Leggatsden Quarry, both Aberdeenshire; Tulloch of Assery, Caithness (Henshall 1983); Newton Road, Carnoustie, Angus (White et al 2009); and Dubton Farm, Brechin, Angus (Cameron 2002). A perforated vessel was recorded from Pit 7903. Very few other perforated vessels are recorded from this period: a vessel from Easterton of Roseisle has a series of perforations just below the rim (Henshall 1983) and seven bowls from the same site have perforations; a vessel from Camster passage grave, Caithness, apparently had perforations but was lost and has never been illustrated (Anderson 1886: 252); a perforated and lugged bag-shaped bowl was recorded at Mosstodloch, Moray (Gray & Suddaby 2012); and a perforated vessel was recorded at Newton Road, Carnoustie (White et al 2009).

A single sherd with fingernail impressions, from an unstratified context at East Lediken (P71,

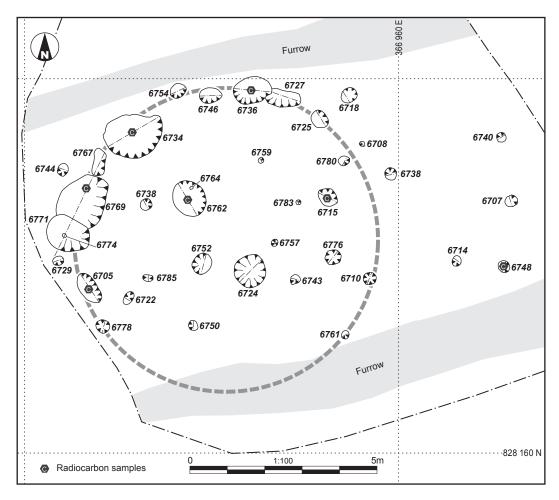
not illustrated), may be a residual Impressed Ware sherd.

MIDDLE TO LATE BRONZE AGE

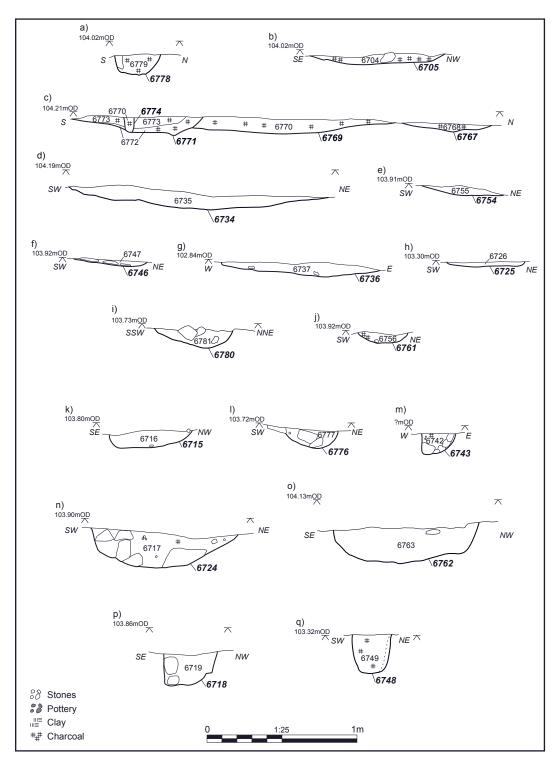
PITMACHIE: POST-BUILT ROUNDHOUSE (NGR: NJ 66955 28165)

Following topsoil stripping in damp weather, an arc of features was identified with some difficulty in the smeared muddy surface. Only after careful cleaning and weathering was the overall pattern discernible (Illus 9, 10).

The height of the ground drops noticeably here, from 104.2m to 103.4m OD across the width of the stripped surface, towards the

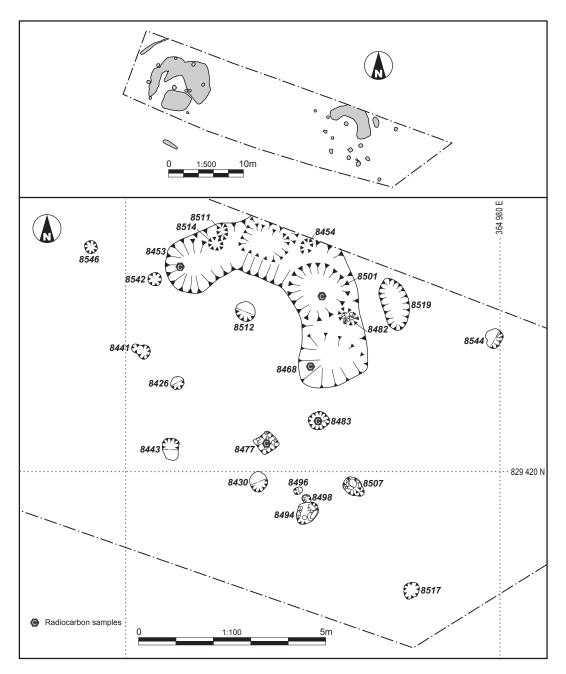


ILLUS 9 Pitmachie: plan of features (© Network Archaeology)



ILLUS 10 Pitmachie: sections (© Network Archaeology)

Ury, 260m to the west. Two broad remnant furrows framed the features, the pattern of furrows continuing north and southwards through the rest of the field, on an approximately 8m spacing. The remains included a ring of at least 15 truncated post holes or shallow pits, forming an arc from Feature 6778, in the south-west, to 6780 in the east, and continuing, beyond a gap, by Features 6710 and 6761. The various elements



ILLUS 11 Little Lediken: plan of eastern ring ditch (© Network Archaeology)

of the ring were all shallow, some vanishingly so, ranging in depth from 0.20 to 0.02m below the stripped surface; if, as seems likely, these features held a ring of posts, it would imply a considerable degree of later truncation, before the rig and furrow agriculture fortuitously buried and protected the surviving features.

Generally, the silty fills were only slightly darker than the underlying natural deposits, but Pits 6771, 6734 and 6727 were rich in charcoal, Pit 6736 contained heat-reddened stones, and a piece of light, porous, brownish-red, nonmagnetic fuel-ash slag was present in Pit 6761. A compacted base of stones in Pit 6727 and a disturbed stony lower fill in Post hole 6729 could be plausibly interpreted as disturbed post packing. External to the ring, Feature 6718 also had post packing of several large stones.

Within the ring and equidistant from its centre, two pits, 6762 to the north-west and 6724 to the south-east, were of similar dimensions. The sandy fill of Pit 6762 contained a chunk of flaked quartzite, while Pit 6724 was largely filled with angular, heat-reddened granitic rocks in a charcoal-rich loose sandy matrix, suggesting an interpretation as a hearth.

On the eastern side of the ring, two similarly sized sub-circular post holes, 6715 and 6776, were set back by around 0.70m from the line of the ring, internal to the gap between Pits 6780 and 6710. The other recorded internal features were, for the most part, small and shallow, and were not readily interpretable. To the east of the ring, four well-defined features, 6740, 6707, 6748 and 6714, were initially interpreted as relating to a possible entrance at this point, but their distance from the ring seems rather too great for this interpretation to be tenable and an interpretation as the remains of an ancillary structure might be more likely.

Only eight sherds of pottery were recovered from the site: from Post holes 6705 and 6780, from Pit 6724 and its neighbour, Post hole 6743, and from Post hole 6748, external to the ring. All eight sherds were abraded and undiagnostic. The pottery fabrics are coarse, either sandy or containing large stone inclusions, and tend to be orange or brown in colour. The recovery of only very small quantities of pottery is not unusual for later Prehistoric post-built structures in the northeast of Scotland as, for example, at Craigellachie, Moray (Dunbar 2017).

The lack of readily datable finds and the degree of truncation of the features present difficulties for the dating and interpretation of the Pitmachie structure. Suitable material for radiocarbon determinations was very sparse, but a single hazelnut shell, four pieces of hazel charcoal and two of birch charcoal, recovered from seven of the features, were submitted for dating. All seven dates lie within a relatively narrow range (Appendix: Table A1), suggesting that they derive from activity broadly associated with the period of occupation of the structure: Bayesian analysis estimates (68% probability) a start date of 1230–1135 BC and end date of 1120–1015 BC (Appendix: Illus A1).

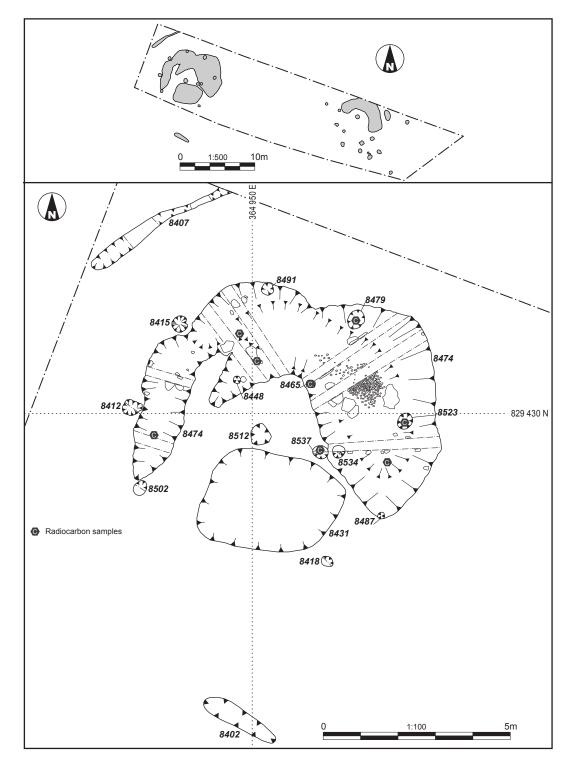
LITTLE LEDIKEN: RING DITCH STRUCTURES

The remains of two ring ditch structures, less than 20m apart, were uncovered 300m southwest of Little Lediken Farm and a similar distance south from the B992 Insch Road (NGRs: NJ 64974 29426; NJ 64951 29430). The site is on a gentle west-facing slope, at a height of between 129.5m and 131.5m OD, with the rising ground preventing any view towards the Ury Valley.

Eastern ring ditch

The smaller of the two ring ditches occupied an area 6m by at least 3.7m, the outer circumference of the arc partly obscured beneath the edge of excavation (Illus 11). As initially exposed, it formed a continuous broad arc, clearly defined in the stripped surface, with a single fill. On excavation, the feature as a whole was shallow, with a maximum depth of no more than 0.25m (Illus 13).

The central part of the arc was recorded in various sections as Contexts 8428, 8445, 8452 and 8490 and contained a brownish-black coarse silt fill, rich in charcoal, and interleaved with striking pinkish to brick-red lenses of peat ash. Much of the charcoal survived as roundwood chunks, mostly of birch with smaller quantities of oak and hazel. Within the fill, large angular rocks,



ILLUS 12 Little Lediken: plan of western ring ditch (© Network Archaeology)

with dimensions up to $40 \text{cm} \times 30 \text{cm} \times 12 \text{cm}$, continued into the northern limit of excavation. This fill also included substantial sherds from three large pottery vessels and a rim-sherd from a fourth.

The fill of the western part, 8453 and 8500, was similar, but lacked the large stones and pottery sherds. To the east, the arc became very shallow, 8501, deepening only slightly at its rounded eastern terminal, 8468. The pinkish peat ash was absent from this side of the ring, although three small fragments of light, porous fuel-ash slag, bright red in patches, show evidence of exposure to high temperatures.

Within the ring ditch, three post holes, 8514, 8454 and 8482, were recorded, one of which, 8514, was cut by a shallower replacement, 8511. Shallow Features 8542 and 8426 may have been the truncated remains of a south-western counterpart to the arc of post holes within the ditch. Feature 8512, which was approximately 2.6m from each of these features, could be interpreted as a heavily truncated central post hole or shallow pit, although it was considered by the excavator to be an infilled void from the displacement of one of the boulders that occurred sporadically throughout the till. A similar explanation is tenable for the other shallow features nearby, including 8441 and 8443.

To the south-east, Post holes 8477, 8483, 8494 and 8507 had charcoal-rich fills with remains of stone post packing, their location supporting an interpretation as the remains of a south-eastfacing entrance structure. If it is assumed that Post holes 8477 and 8483 were in the inner wallline of the structure, it would imply an overall internal radius of around 3.5m, extending for around 90cm beyond the post hole ring.

The copious quantities of peat ash in the fills of the ring ditch imply that peat turfs were used for roofing or for surrounding walls. The elongated, sausage-shaped pit, 8519, to the east of the structure is difficult to reconcile with a turf wall, unless the pit was an earlier feature, or the inner wall of the structure was farther out than Post holes 8477 and 8483. A roof continuing down to, or close to, ground level beyond Pit 8519 may be more plausible.

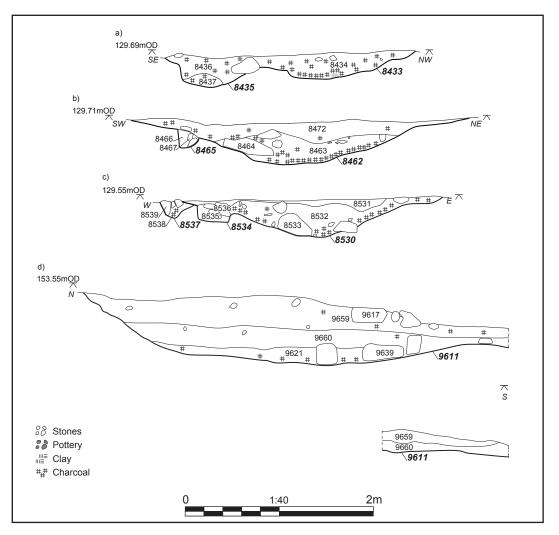
Western ring ditch

The western ring ditch was larger, with maximum dimensions of $8m \times 5.5m$, and up to 0.55m deep, becoming shallower towards the terminals (Illus 12, 13). Through most of the feature, the fill, up to 0.35m in depth, was consistently dark greybrown sandy silt with frequent charcoal and pinkish peat-ash lenses. Several small pieces of black or reddish-brown fuel-ash slag were recovered from this fill.

In some parts of the ring ditch, an upper fill had accumulated. This was also rich in charcoal but lacked peat ash and varied from greyish- to reddish-brown across the feature. This deposit produced fewer artefacts than the lower fill and is thought to be post-occupation infilling, following the destruction by fire of the structure. Angular stones and boulders, up to 40cm or more across, were scattered within the lower fill, disposed randomly, as if they had been tipped in to the ring ditch prior to its infilling, and typically resting where the slope of the sides levelled off towards the base. Near the south-eastern terminal, a spread of small stones forming a metalled surface in the base of the ditch is likely to have originated during the occupation phase of the structure.

A short length of a curvilinear gully, 8450, up to 0.3m deep, protruded from the internal side of the ring ditch for around 2m, tapering and becoming shallower towards its south-western terminal. Initially interpreted as from a separate phase of the structure, its relationship to the rest of the ring ditch is uncertain. An alternative reading (that this was an integral part of the ring ditch, separated from the western arm by a less deeply excavated ridge) would be tenable, especially if, as seems to be the case, the final form of the ring ditch had been determined by erosional patterns from use rather than deliberate design.

Post holes 8502, 8412, 8415, 8491, 8479, 8523, 8487 and 8418 formed a ring around the edge of the ring ditch, or within the fill of its outer edge. These were complemented by Post holes 8534, 8465 and 8448 on the inner edge. Seven of these features still retained stone post packing, in two cases incorporating reused stone tools, including an anvil stone in

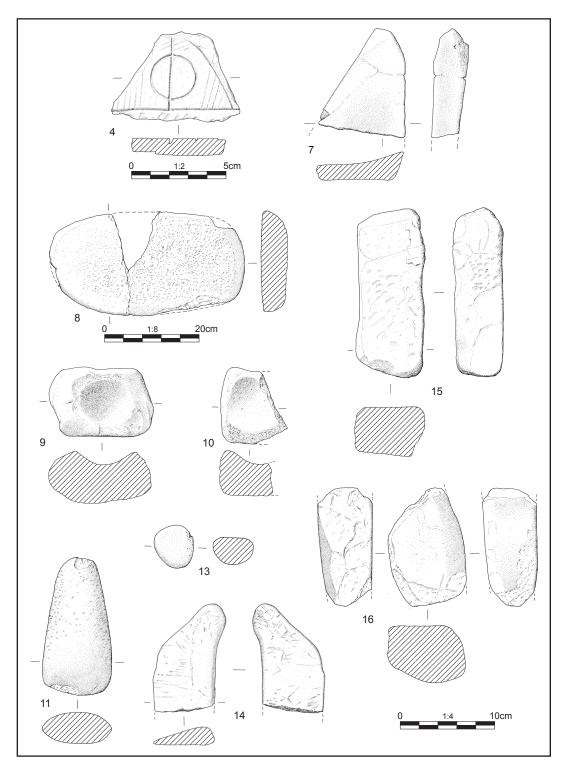


ILLUS 13 Little Lediken and Wrangham: representative sections of ring ditches (© Network Archaeology)

Post hole 8418. There was no clear distinction in fill, or break of slope corresponding to the post hole ring, suggesting that both the form of the ring ditch and the deposition of its lower fill were the results of single formation processes. Within the space enclosed by the arc of the ring ditch, Feature 8512 was close to the geometric centre of the post hole ring.

To the south, a large rectangular feature, 8431, occupied much of the gap between the terminals of the ring gully, but it had a very different profile with a flat base little more than 20cm deep and fairly steep sides. Its brown silty clay fill produced only a single fragment of flaked quartzite along with two pieces of hazelnut shell. If the ring ditch resulted from differential wear around the interior of a post-built structure, there must have been a very distinct use for this southern part of the interior space.

Feature 8407, emerging from the limit of excavation to the west of the ring ditch, could be interpreted as a drip gully or drainage feature, external to a probable turf wall and therefore indicating a maximum external limit of the structure. Farther south, an elongated pit, 8402, contained a saddle quern fragment



ILLUS 14 All sites: stone artefacts (© Network Archaeology)

and small quantities of plain body sherds of Prehistoric pottery, as well as several heataffected stones.

A range of stone artefacts were found within the ring ditch fill, including a Neolithic ground stone axe, two fragments of quern rubber, hollowed stones and a cobble tool, as well as nine pieces of worked flint and quartzite. This contrasts with the eastern ring ditch and its associated features which produced no notable stone finds, perhaps implying that these two structures were functionally distinct. The western ring ditch also produced 163 sherds of Middle to Late Bronze Age pottery, along with pieces of fuel-ash slag.

The Neolithic stone axe was found on the outer lip of the ring ditch, in a way that suggested deliberate placement and curation, especially as the hollowed stones and cobble tool were found in the same section of the ditch. The axe has some edge damage, raising the possibility of its reuse during the Late Bronze Age. Equally, these finds could have been purely accidental inclusions, possibly brought to the site in turfs used for walls or roofing.

A range of different contexts were sampled for radiocarbon dating, including lower fills from the component parts of the two ring ditches, their associated post holes and the fill of Gully 8407. The results all fell within a broad 12thto 9th-century BC range, but Bayesian analysis indicates that the results are not statistically consistent, whether for the two structures considered together or separately. This was not unexpected, given that the dated samples could have included residual or reused material, incorporated into the various elements of the structures during their construction and occupation, or deposited during the subsequent abandonment and infilling of the features.

Stone finds from Little Lediken

Ann Clarke

The Neolithic stone axehead (SF8; Illus 14: 11) appears an incongruous find in a Bronze Age ring ditch. It is a fine complete specimen of an axe made from metamorphosed sandstone, ground all over and then polished around the blade end. The butt and blade are slightly damaged by percussion and the blade edge is blunted. This edge damage is likely to be from later use, contemporary with the use of the ring ditch structure.

A broad blade-like flake of mottled brown flint with a possible dihedral platform (SF13; Illus 4: 12) from destruction Layer 8463 also indicates earlier prehistoric activity in the area.

The saddle quern fragment (not illustrated) found in the fill of Pit 8402 is a block of coarsegrained metamorphosed sedimentary rock, which has broken irregularly across one end. The upper worn face is smooth and slightly concave and worn out to the edges.

Two fragments found at different points in the ring ditch fill (SF10 and SF16) refit to form a single incomplete quern rubber (Illus 14: 8). The face is gently concave along the length, and slightly convex along the width. On both ends, the worn face tips down. The whole working surface is very smooth, polished in parts and worn out to the edges. It is large at 410mm in length and has a flat base.

A large flat saddle quern found in the ditch of a Middle Bronze Age roundhouse at Hatton Farm, Angus (Gray & Suddaby 2010), echoes the deposition of the fragments of quern rubber and saddle quern here.

Two hollowed stones were found in the ring ditch fill. A rhomboid block of sandstone with a rounded base and irregular sides (SF12; Illus 14: 9) has a regular oval, round-based hollow worn into the centre of the upper face and it is worn smooth inside. The other piece (SF9; Illus 14: 10) is a squared block of metamorphosed sedimentary rock with a flat base and irregular sides. The hollow has been worn on the upper face from use and truncated by breakage. As with SF12, the hollow is round-based and worn smooth in the interior. They also share similar dimensions at around 120mm long and 25mm deep. Given the smooth interior of the hollows, it is likely that these had been used as some form of mortar for mixing or grinding small amounts of material.

Although hollowed stones are more commonly found in Iron Age contexts, where they come in many sizes and shapes (Clarke 2006), a hollowed stone described as a mortar, of similar dimensions to the two from Little Lediken, was found in hillwash over the Bronze Age settlement at Lintshie Gutter, Lanarkshire (Terry 1996).

The centre of the flatter face of a flat cobble of fine-grained stone, now broken across its middle (SF13; Illus 14: 14), is worn smooth and shiny, and there are groups of small multidirectional striations across both faces as a result of its use as a smoother. There is also a spread of pecking across the unbroken end. A small quartzite pebble was also selected for use as a smoother (Illus 14: 13). Use of a rectangular block of stone (Illus 14: 15) left pecking damage along the length of all its faces and sides. Flaking damage along the edge truncates the pecking and it is likely that this was used as a hammerstone or anvil. It had been reused as post packing in Post hole 8418.

Two angular quartzite flakes from the western ring ditch terminal were detached from what is most likely the same nodule. Their removal may have been incidental, perhaps from a piece of quartz being used as a hammerstone, rather than a deliberate attempt to work quartz.

Coarse stone tools are, in general, much less frequent finds at Prehistoric sites in mainland Scotland than, for example, on sites in the Northern and Western Isles (Clarke 2006). This is particularly true for Bronze Age roundhouses across mainland Scotland, where excavation has demonstrated that the assemblages of stone tools are small in size and formed of a limited range of tools: mainly cobble tools and saddle querns.

Flat saddle querns were found at Lintshie Gutter, Lanarkshire, and Hatton Farm, Angus (Terry 1996; Gray & Suddaby 2010), and what has been described as a grinding platform from Oldmeldrum, Aberdeenshire (White & Richardson 2010). Other stone finds from these sites included a stone disc and perforated weight found at Oldmeldrum, a hollowed stone from Lintshie Gutter (Terry 1996) and a pounder/grinder from Hatton Farm. A limited range of stone tools have also been found at Bronze Age roundhouse sites in Sutherland, such as Upper Suisgill (Barclay 1986); Lairg (McCullough & Tipping 1998); Navidale (Dunbar 2008) and Connagill (Clarke 2015a). Here the stone artefacts comprise saddle querns, cobble tools of various types, and occasionally stone discs as at Lairg and Connagill. The apparent uniformity in the use of stone tools across mainland Scotland at this time might vary on closer inspection as, for example, the querns from Navidale and possibly one or two from Lairg appear to be more dished than those with flatter surfaces from other sites and this would suggest a different grinding technique.

Pottery from Little Lediken

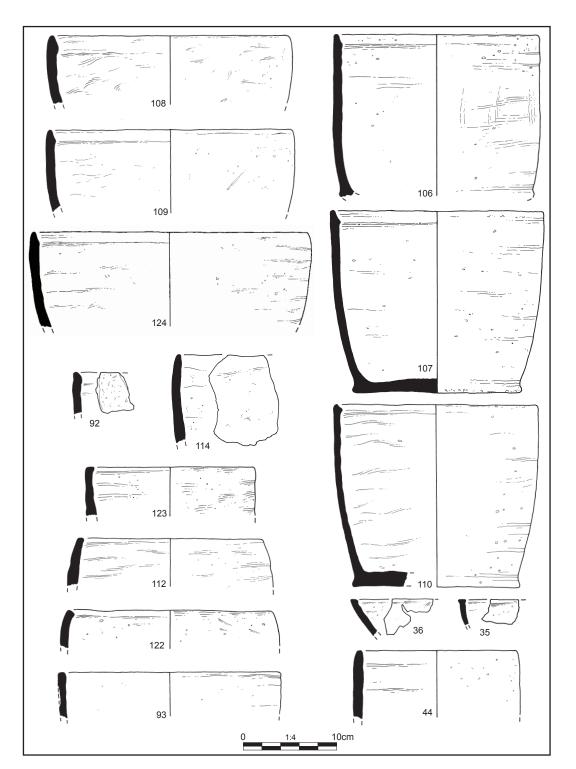
Melanie Johnson

Fifty separate vessels were recorded from Little Lediken, including 17 with diagnostic traits (Illus 15). Roughly equal weights of pottery were recovered from the two structures: 164 sherds weighing 2,723g from the western and 239 sherds weighing 2,988g from the eastern, but there were more vessels – 32 as opposed to 18 – represented in the western roundhouse.

The western ring ditch house contained 11 diagnostic vessels and a further 84 plain body sherds. There are four examples of upright internally bevelled rims (P92, P108, P109, P124), two of upright flat-topped rims (P114, P123), two of slightly inturning flat-topped rims (P112, P122) and single examples of an upright rounded rim (P93), a rounded rim with neck (P118, not illustrated), and a flat base (P121, not illustrated). Measurable rim diameters are 18–26cm.

The fills of the eastern ring ditch contained four diagnostic vessels. These included substantial portions of three different vessels (P106, P107 and P110). All were simple straightsided vessels with upright internally bevelled rims and flat bases. Base diameters of 18cm and rim diameters of 18–22cm were recorded. There was also part of a bowl with a flattened rim (P36), as well as 25 plain body sherds.

In addition, a rounded rim (P31, not illustrated) and a flattened rim, expanded to the exterior (P35), both from bowls, were recovered from Post holes 8430 and 8477 respectively. Small quantities of plain body sherds were found in Post hole 8483 and as unstratified finds while cleaning.



ILLUS 15 Little Lediken and Wrangham: Bronze Age pottery (© Network Archaeology)

WRANGHAM: RING DITCH STRUCTURE (NGR: NJ 63523 31515)

Remains of a ring ditch structure were uncovered 200m north of the settlement of Wrangham, and just over 50m south-east of the minor road running from Colpy towards Insch. The site lies at around 153m OD on ground sloping up eastwards towards the 185m-high Fallow Hill with long views to the Bennachie range to the south and west.

The western side of the ring ditch was beyond the limit of excavation but the visible portion indicated that the whole structure occupied an area up to 12m across (Illus 16). It was cut into sloping ground, with the base 1.1m below the subsoil surface at the north but becoming vanishingly shallow towards its southern terminal. The northern edge had a slightly stepped profile (Illus 13d) and there was a suggestion of a compacted surface of small gravelly stones, at a depth of around 450mm. From this point, the side dropped more gently to a shallow dished base. The interior edge of the ring ditch was very shallow, becoming increasingly imperceptible to the south.

The lower fill of the ditch, 9621, included large stones, some up to 0.4m or more across, which are abundant in the glacial tills in the immediate locality. At one point in the inner edge of the base of the ditch, several of these stones appeared to have been deliberately placed on the edge, forming a kerb or low revetment.

Above and around these stones a thick deposit of silt and pinkish-red peat ash, 9660, contained frequent charcoal patches and lumps, including recognisable pieces of sharpened roundwood timbers. Although this had all the signs of being a destruction deposit, from the burning and subsequent collapse of the structure, the layer also produced 47 sherds of Middle to Late Bronze Age pottery, two possible coarse stone tools and burnt bone fragments, which would indicate that there was continuing activity in the vicinity as the deposit accumulated. A cleaner back-fill of reddish-brown sandy-silt, 9659, had formed above 9660 and the uppermost fill was a loose disturbed matrix, of similar composition, around large and medium, angular and rounded stones, some of which showed heat-reddening. The stones in the upper fills could be explained as the result of later field clearance, using the partly infilled, abandoned ring ditch as a convenient dumping place.

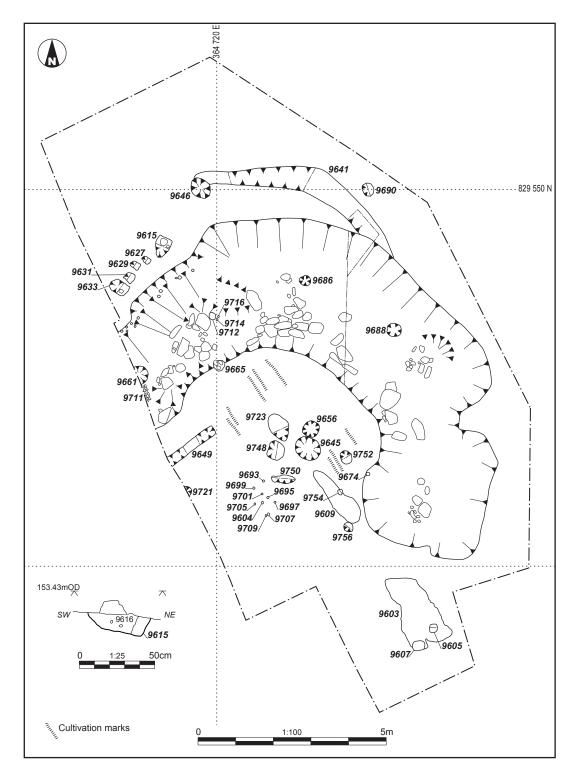
Along the north-western edge, 11 stake holes formed a line just below the lip of the ditch, matched by a row of five small pits or post holes beyond the edge of the ditch. Four post holes and several small stake holes were recorded in the base of the ring ditch. A shallow curving gully, 9641, to the north was recorded as stratigraphically earlier than the ring ditch, although this relationship, and that with the small pit at its western end, was far from clear.

The centre of the interior space had a group of three well-defined features: a stone-filled pit, 9656; a larger pit containing small quantities of burnt bone, 9645; and a small post hole, 9748. A circular patch of heat-reddened ground nearby, 9723, signalled the site of a fire or hearth. Several smaller features, including post holes and stake holes, were also recorded. One of the few lithic finds from the site, a simple flake of mottled light brown flint (SF23), came from the fill of a small, shallow gully, 9649, running beneath the limit of excavation. The surface of the underlying till in this central area was crossed by narrow parallel scoring, interpreted as cultivation marks. Their relationships to the other features were unclear but they were not seen to have disturbed the fills of the central pits or possible hearth and may have been from earlier cultivation.

Finds from Wrangham

Melanie Johnson and Ann Clarke

Eleven separate vessels were represented in the pottery from the ring ditch fill. These included 20 rim and body sherds from a bucket-shaped vessel (P44, Illus 15) with an upright flat-topped rim and a diameter of 19cm, and two base sherds (P62, P66, not illustrated). A single plain body sherd was found in Gully 9641 and a single base sherd in Pit 9676. A base and two body sherds from the surface were recovered from the shallow terminal during initial cleaning (Context 9603). Vessel P44 is typical of the Middle to Late



ILLUS 16 Wrangham: plan of ring ditch, and representative section (© Network Archaeology)

Bronze Age, and the other base sherds are also likely to belong to this same period.

The surprisingly small quantity of artefactual stone from this site does not appear in contexts contemporary with the use of the structure. A regular inner flint flake with a flat platform, residual in the post-destruction infilling of the ring ditch, suggests an earlier Prehistoric date. The same deposit also had an angular quartzite waterworn cobble, deliberately flaked around the ends and one side to create coarse, chopperlike edges. Large irregular flakes were detached from the cobble, with no clear shaping intention, resulting in the creation of some obtuse-angled edges. These edges were then used as heavy choppers or wedges, hammered in from the opposite side, leaving patches of coarse pecking on the cortical surface (Illus 14: 16 centre and right). Heavy rounding wear is evident along the edges that were in contact with the material being worked (Illus 14: 16 left). A simple wedge-shaped piece of quartzite with some coarse edge damage along the acute edge came from the very shallow and poorly defined Feature 9603, to the south of the ring ditch terminal, and may have been used in the same way as the flaked cobble.

Flaked cobbles are commonly found at Bronze Age sites in Orkney, such as Tofts Ness, Sanday and Crossiecrown, St Ola (Clarke 2007, 2015b), and in Shetland (Clarke 2006), where they are made from regular oval beach cobbles. At Stainton West, Carlisle, a group of flaked cobbles were identified from Late Neolithic/ Bronze Age deposits in a palaeochannel (Clarke 2012). The occurrence of the flaked cobble at Wrangham provides evidence of these tool forms being used more widely across Scotland.

BRONZE AGE POTTERY

Melanie Johnson

Internally bevelled and flat-topped rims on vessels with flat bases and straight sides are typical characteristics of later Prehistoric domestic pottery associated with Middle to Late Bronze Age roundhouses in the north and east of Scotland. This assemblage forms a coherent group, with no distinction between the assemblages from the roundhouses. The pottery from Little Lediken and Wrangham is typical of Middle to Late Bronze Age pottery associated with domestic roundhouse structures from Aberdeenshire and elsewhere in the north-east of Scotland, broadly dating to the second half of the 2nd millennium and into the first half of the 1st millennium BC.

The ring ditch house in Wrangham is associated with Middle to Late Bronze Age radiocarbon dates in the range 1380-930 BC, while the dates from the ring ditch houses at Little Lediken are slightly later, from 1200 to 810 BC. Additionally, undiagnostic pottery from the Pitmachie roundhouse is associated with features from which Middle to Late Bronze Age radiocarbon dates were obtained, calibrating to 1290-920 BC, and these dates agree with the suggestion from the fabrics and context that the pottery is later Prehistoric. Therefore, there is a good correspondence between the pottery types identified and the radiocarbon dating, and the pottery is a useful addition to the corpus of later Bronze Age pottery from the north-east of Scotland.

The pottery belongs within the so-called flatrimmed ware tradition (Coles & Taylor 1970), a rather ill-defined ware common throughout Scotland in the later Bronze Age which is now known to include not just flat rims but often internally bevelled rims. This ceramic type has yet to receive a universally accepted alternative name, and the typology and chronology of this later Prehistoric ware is poorly understood, but it has both longevity of use and a widespread distribution in domestic contexts; this renders it less useful for spotdating of settlement activity. It is possible that refinements, such as regional patterning, could be made through more detailed synthetic analysis and dating, including analysis of the types of structures with which it is associated. For example, decorated vessels have been recorded within structures dating to the Middle to later Bronze Age (1610–1132 BC) at Drumyocher, Aberdeenshire (Johnson 2017), while ridged vessels have been recorded within ring ditch structures at Oldmeldrum, Aberdeenshire, dating

to the period 1530–820 BC (White & Richardson 2010), and at Kintore, Aberdeenshire (Cook & Dunbar 2008).

The pottery from the Late Bronze Age structures on the Moray Reinforcement Pipeline does not include any decoration or external ridges. However, internally bevelled rims are common in Aberdeenshire in the Middle and later Bronze Age and may prove to be the defining regional characteristic of assemblages of this date in the north-east of Scotland (McGill 2004: 156), and are the dominant form at both Pitmachie and Little Lediken as it was at Drumyocher, Aberdeenshire (Johnson 2017), and Kintore, Aberdeenshire (Cook & Dunbar 2008).

Comparable assemblages of similar date at other settlement sites include: Drumyocher (Johnson 2017), which consisted of barrel- or bucket-shaped vessels with upright or inturning rims, often with an internal bevel or otherwise with a flat or rounded top; Kintore (Cook & Dunbar 2008), where flat and internally bevelled rims on thick-walled bucket-shaped vessels were present along with examples of external ridges or cordons below the rims; Deer's Den, Kintore, Aberdeenshire (Alexander 2001), which produced bucket- and barrel-shaped vessels with flat bases and closed mouths, their rims including plain flat rims and short everted rims with internal bevels; and Ednie, Peterhead (Strachan & Dunwell 2004), which included inturning, flat and internally bevelled rims. Farther afield, similar pottery is found at sites such as Green Knowe, Scottish Borders (Jobey 1979), Lairg, Highland (McCullagh & Tipping 1998), Blackford, Perth & Kinross (O'Connell & Anderson forthcoming), and Kiltaraglen, Skye, Highland (Suddaby 2013).

Within ring ditch structures, the pottery is often found within the fill of the ditch, suggesting post-abandonment deposition, as at Oldmeldrum Houses 1 and 3 (White & Richardson 2010) and Drumyocher Structure 1, while nearby structures can produce very little pottery as at Oldmeldrum House 2 and Drumyocher Structure 2. As has been suggested (Johnson 2010: 15), distinct differences between quantities of pottery deposited could indicate some degree of intention during either use or abandonment. Examples of whole pots are known (eg Structure 3 at Drumyocher (Johnson 2017)) but none of the larger deposits of sherds from Little Lediken and Wrangham are large enough to suggest that a whole vessel was deposited.

DISCUSSION

Following the terminology of Pope (2015), the Little Lediken structures have been described here as 'ring ditch structures'. She stresses that 'ring ditches are not a house type as such, but rather the signature of a formation process'. The characteristic penannular ditch of these structures was internal to the outer wall line and, rather than being a deliberate element of the structure, can be considered to have resulted from erosion of soil, from livestock movements within the structure and from deliberate mucking out. In some cases, these structures may have been used solely for housing animals, but in most cases they are likely to have been used for human habitation as well.

Both of the Little Lediken structures had post holes around the outer edge, or within the fills, of their ring ditches, though more clearly defined in the western than the eastern structure. An estimated internal radius of around 3.5m for the eastern structure, with up to 1m between the wall and the post ring, would not accommodate the whole width of the ring ditch, and certainly not the sausage-shaped pit 8519. If this pit was contemporary and within the structure, it increases the radius to around 4.5m.

In the western ring ditch structure, the post hole ring was rather better defined and had a radius of 3.2m, while taking in the maximum extent of the ring ditch would increase the estimate of the internal radius to close to 5m. It needs to be borne in mind that the extent of the features, as excavated, ignores the depth of the ploughsoil but includes post-abandonment erosion or damage.

Any attempt at reconstruction of the structures is highly speculative, but the turf peat ash and charcoal from birch, hazel and smaller quantities of oak in the fills of the ring ditches would be consistent with the conventional picture of a conical roof, braced with upright timbers set in a post hole ring. Though both structures had possible central post holes, these were shallow and perhaps were used only temporarily during construction, before the posts were removed to form an open central living space.

Although at first sight the plan of the Pitmachie structure appears very different, it is possible that this was a similar structure abandoned at an earlier stage of its evolution. Already, on its western and northern side, the ground around the ring had been eroded to form a series of conjoined pits; with erosion and the passage of time these could have coalesced into a ring ditch. An alternative interpretation could be that the individual post holes lost their definition as a result of posts being removed or lost during the collapse of the structure. It may also be the case that in this rather more sheltered valleybottom location, the structure was functionally or culturally distinct from those at Little Lediken.

The Wrangham ring ditch was the largest of the excavated structures, fitting within a circular area of around 5.5m radius, with the post holes 9661, 9686 and 9688 likely candidates for the remains of a ring with a 4m radius. The depth of the ring ditch on its northern side set it apart from the other ring ditch structures, though this was emphasised by the steepness of the slope. When it was first built, it is likely to have appeared very similar to the Little Lediken structures.

In conclusion, monitoring of construction of the Moray Reinforcement Pipeline has added significantly to the knowledge base of Neolithic and Bronze Age Aberdeenshire. The areas of archaeological potential along the route were successfully identified and investigated within the tight programme constraints and challenging working conditions imposed by a linear construction site. The results emphasise the importance of the region as one of the core areas for understanding Prehistoric occupation and culture of Scotland, of the island of Britain and of western Europe. The findings from the Neolithic pit groups either side of the Shevock Burn, and especially their ceramic assemblages, together with the structures at Pitmachie, Little Lediken and Wrangham support and add incrementally to our understanding of these periods.

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APPENDIX: RADIOCARBON DATING

Derek Hamilton

Thirty-six samples of charred grain, charred nutshell or small roundwood charcoal were submitted to the Scottish Universities Environmental Research Centre (SUERC) for AMS radiocarbon dating (Table A1). Standard SUERC procedures were used; full details are given in the archive report.

A Bayesian approach was applied to the interpretation of the radiocarbon dates from each of the six sites along the pipeline. For each site, the only assumptions were that the dated material related to a single uniform phase of relatively continuous depositional activity and constituted random samples of the deposited material.

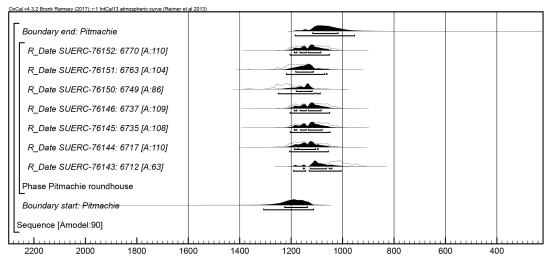
For Pitmachie, the analysis has good agreement (Amodel=90). It estimates the activity associated with the post-built structure began in 1310–1110 cal BC (95% probability; Illus A1: 'start: Pitmachie'), probably in 1230–1135 cal BC (68% probability). It was used for a maximum of 305 years (95% probability), and probably for no more than 180 years (68% probability). The structure was out of use

in 1185–950 cal BC (95% probability; 'end: Pitmachie'), and probably 1120–1015 cal BC (68% probability).

(In Illus A1 and A2, each distribution represents the relative probability that an event occurred at some particular time. For each of the radiocarbon measurements two distributions have been plotted, one in outline, which is the result of simple radiocarbon calibration, and a solid one, which is based on the chronological model used. The other distributions correspond to aspects of the model. For example, 'start: Pitmachie' is the estimated date for the activity at this site. The large square brackets along with the OxCal keywords define the overall model exactly.)

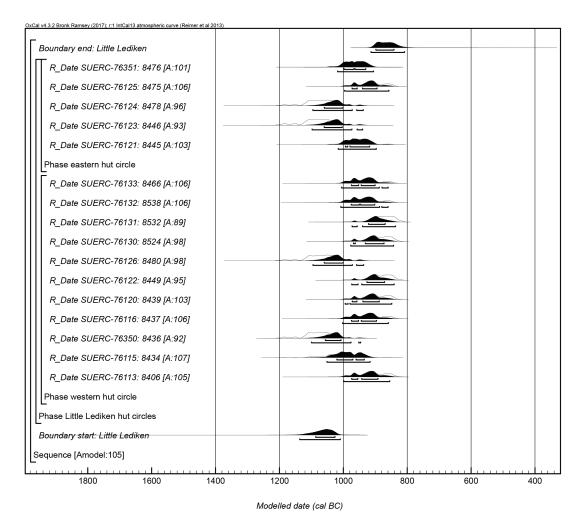
At Shevock, five results from the five pits indicate an overall range of 3496 to 2917 cal BC, but despite the features forming a compact group, the results are not statistically consistent, which would suggest that the pit-digging activity was neither very short-lived nor a single event.

The Bayesian model for the three dates from East Lediken, from Pits 7505, 7401 and 7402, has good agreement (Amodel=110). Analysed together, they are statistically consistent (T'=0.3; v=2; T'(5%)=6.0) and all three samples could



Modelled date (cal BC)

ILLUS A1 Chronological model for Pitmachie



ILLUS A2 Chronological model for Little Lediken

be the same age. The analysis estimates that pit activity began in 3775-3030 cal BC and probably in either 3415-3235 cal BC (56% probability) or 3190–3165 cal BC (3%) probability) or 3145-3090 cal BC (9%)probability). The activity lasted for a maximum of 1,050 years, and probably for 1-300 years (68% probability). The activity ended in 3320-2600 cal BC, and probably in either 3285-3145 cal BC (34% probability) or 3115-2975 cal BC (34% probability).

The radiocarbon dates for the two pits from North Lediken are around 250 radiocarbon years different, implying that these two features are unrelated: the calibrated dates for each pit provide the best estimate for their respective associated assemblages.

Sixteen radiocarbon results from Little Lediken are not statistically consistent, whether considered as a single group (T'=61.0; v=15; T'(5%)=25.0) or broken down into separate western (T'=40.9; v=10; T'(5%)=18.3) and eastern (T'=15.2; v=4; T'(5%)=9.5) ring ditch groups. Therefore, the material dated is likely to have accumulated over a protracted period.

The model has good agreement and estimates the activity began in 1140-1010 cal BC (95%)

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TABLE A1
Summary of radiocarbon results

Lab ID	Context, feature	Material dated	$\delta^{\scriptscriptstyle I3}C$ ‰	RC Age BP	Calibrated cal BC (95%)
Shevock					
SUERC-76136	7103, Pit 7101	charred nutshell: Corylus sp	-23.1	4462±27	3340-3020
SUERC-76140	7111, Pit 7109	charcoal: Corylus sp	-25.8	4523 ± 30	3370-3090
SUERC-76141	7106, Pit 7105	charred nutshell: Corylus sp	-21.9	4402±30	3270-2910
SUERC-76142	7108, Pit 7107	charred nutshell: Corylus sp	-25.6	4401±30	3270-2910
SUERC-76355	7102, Pit 7104	charred nutshell: Corylus sp	-25.0*	4584±25	3490-3190
East Lediken					
SUERC-76111	7404, Pit 7401	charred nutshell: Corylus sp	-28.2	4457 ± 30	3340-3010
SUERC-76112	7406, Pit 7402	charred nutshell: Corylus sp	-24.9	4450±27	3340-3010
SUERC-76114	7512, Pit 7505	charred nutshell: Corylus sp	-25.9	4470±26	3340-3020
North Lediken					
SUERC-76134	8300, Pit 8301	charcoal: Corylus sp	-27.0	4471±30	3350-3020
SUERC-76135	8311, Pit 8310	charred grain: Hordeum sp	-25.9	4741±30	3640-3370
Pitmachie					
SUERC-76143	6712, Ph 6705	charcoal: Corylus sp	-26.5	2859±29	1120-920
SUERC-76144	6717, Pit 6724	charcoal: Corylus sp	-27.1	2933±29	1230-1020
SUERC-76145	6735, Pit 6734	charcoal: Corylus sp	-27.5	2918±29	1220-1010
SUERC-76146	6737, Pit/Ph 6736	charred nutshell: Corylus sp	-26.0	2921±29	1220-1010
SUERC-76150	6749, Ph 6748	charcoal: Betula sp	-26.1	2983±27	1290-1120
SUERC-76151	6763, Ph 6762	charcoal: Betula sp	-26.2	2958±29	1270-1050
SUERC-76152	6770, Pit 6769	charcoal: Corylus sp	-26.1	2923±29	1220-1010
Little Lediken					
SUERC-76113	8406, Gully 8407	charcoal: Betula sp	-27.1	2769±29	1010-830
SUERC-76115	8434, w ring ditch	charred grain: Hordeum sp	-22.8	2838±29	1110–910
SUERC-76116	8437, w ring ditch	charcoal: Corylus sp	-27.4	2776±29	1010-830
SUERC-76120	8439, w ring ditch	charred grain: Hordeum sp	-23.6	2763±27	980-830
SUERC-76122	8449, Ph 8448, w ring ditch	charcoal: Corylus sp	-26.3	2749±25	970-820
SUERC-76126	8480, Ph 8479, w ring ditch	charcoal: Betula sp	-26.9	2884±29	1190–970
SUERC-76130	8524, Ph 8423, w ring ditch	charcoal: Corylus sp	-26.3	2755±27	980-830
SUERC-76131	8532, w ring ditch	charcoal: Corylus sp	-26.7	2734±29	930-810
SUERC-76132	8538, Ph 8537, w ring ditch	charcoal: Corylus sp	-27.4	2784±29	1010-840
SUERC-76350	8436, w ring ditch	charcoal: Corylus sp	-26.5	2791±24	1190-1000
SUERC-76121	8445, Pit 8453, e ring ditch	charred grain: Hordeum sp	-23.4	2802 ± 27	1020-890

Lab ID	Context, feature	Material dated	$\delta^{\scriptscriptstyle I3}C$ ‰	RC Age BP	Calibrated cal BC (95%)
Little Lediken					
SUERC-76123	8446, Pit 8468, e ring ditch	charred grain: Hordeum sp	-25.0*	2891±29	1200–990
SUERC-76124	8478 Ph 8477, e ring ditch	charcoal: Quercus sp	-25.9	2886±29	1200–970
SUERC-76125	8475 Ph 8483, e ring ditch	charcoal: Corylus sp	-26.2	2771±25	1000-840
SUERC-76133	8466, Ph 8465, w ring ditch	charcoal: Betula sp	-24.9	2782±27	1010-840
SUERC-76351	8476, Pit 8501, e ring ditch	charcoal: Corylus sp	-27.1	2814±24	1030–900
Wrangham					
SUERC-76153	9612, Ring ditch section 9111	charcoal: Quercus sp	-27.5	2909±29	1220-1000
SUERC-76154	9638, Ring ditch section 9622	charcoal: Corylus sp	-25.5	2862±25	1120–930
SUERC-76155	9638 Ring ditch section 9622	charcoal: Quercus sp	-26.9	3004±29	1380-1120
			*Assumed value		

 TABLE A1

 Summary of radiocarbon results (cont)

probability; Illus A2: 'start: Little Lediken'), and probably in 1090–1025 cal BC (68% probability) and ended in 915–805 cal BC (95% probability; 'end: Little Lediken'), and probably 900–840 cal BC (68% probability), giving a maximum range of 105–310 years (95% probability); or probably 140–245 years (68% probability).

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'The Spearhead of the Pennon ...': a Bronze Age spearhead carried into the Battle of Flodden?

Matthew G Knight¹ and Trevor G Cowie²

ABSTRACT

In 1999, the late Professor Charles Thomas donated a Middle Bronze Age spearhead to the National Museum collection. This spearhead came with a label indicating that it was part of the pennant taken into the Battle of Flodden by Robert Chisholme in 1513. This paper investigates the likelihood that such a claimed association could have any basis in truth, as well as briefly contributing some thoughts on the discovery of already ancient objects in the past.

INTRODUCTION

At the close of his Rhind Lecture series in 1999, the late Professor Charles Thomas generously gifted the Society with a bound volume of *The Scots Chronicle* for the Library, while the National Museum collection was presented with a fine example of a Middle Bronze Age spearhead (Illus 1).

Although bought at auction and with no known provenance, the spearhead came with a fascinating story attached, for rolled up inside the socket of the weapon there was a paper label (Illus 2) with the following inscription, hand-written in ink:

The Spearhead of the Pennon carried By Robert Chisholme of that Ilk Roxburghshire in the Battle of Flodden in which he was slain

At the time, one of the authors (TGC) contributed a note on this artefact to the Society's newsletter, in which he took a sceptical standpoint regarding the supposed association of a Bronze Age weapon with a historical event some three millennia later (Cowie 2000a, 2000b); however, a subsequent rejoinder raised the interesting possibility that this prehistoric artefact might at least have had a long association with the Chisholme family (Munro 2000).

In revisiting this intriguing object, our aim with this paper is to examine the supposed family association of the spearhead in detail in order to critically assess the possibility that a Bronze Age spearhead may have been carried into the Battle of Flodden. We shall consider in turn the spearhead itself and the circumstances of its acquisition and the discovery of the paper label by Professor Thomas, before considering relevant aspects of the Chisholme family history. Finally, we shall consider this discovery in light of other examples of already ancient objects discovered and curated in the past, since such finds have a bearing on the questions of reuse and reinterpretation of ancient artefacts discovered in the historic past.

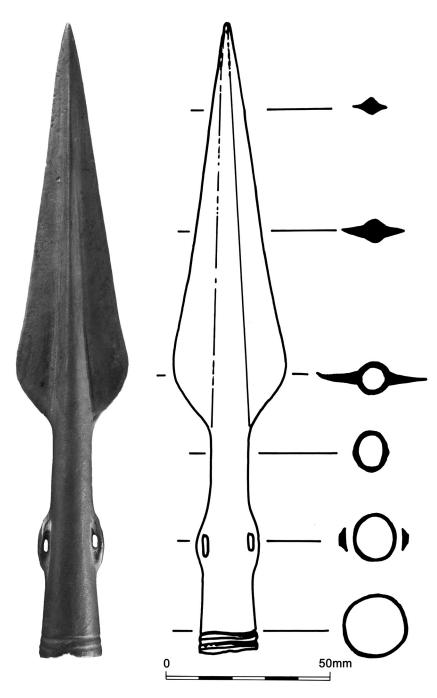
Although 'Chisholme' may alternatively be spelled 'Chisholm' (eg Robson 1998), the former spelling has been adopted throughout this article so as to maintain consistency with the handwritten label.

THE SPEARHEAD

The spearhead (NMS X.DG 117) is a sidelooped type, characteristic of the Middle Bronze Age and broadly dating to the Taunton-Penard metalworking phases (c 1400–1150 _{BC}) (following Needham et al 1997: 84–90). In Davis'

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ILLUS 1 The Chisholme spearhead (photo: Neil McLean; drawing: Alan Braby © National Museums Scotland)

the Spear head of the Bonnon Carried By Probent Christielmo of that Helt West Funghishing in the Walter of Hoddon in which he was Stain

ILLUS 2 The label found inside the socket of the spearhead (photo: Neil McLean © National Museums Scotland)

(2012) recent typological scheme, it can be considered a 'Developed side-looped' spearhead, falling within his Type 6B which is defined by a 'flame-shaped' blade and side-loops which are lozenge-shaped in profile. The spearhead has been cleaned since discovery, leaving a bronze-coloured patina and removing any traces of prehistoric manufacture or use; however, it appears to have been a good casting with no obvious defects. The spearhead is 190mm long and 34mm wide at the widest part of the blade. The socket is circular with an external diameter of 18.5mm, and the overall weight is 85g. The form and dimensions are entirely in keeping with a Middle Bronze Age spearhead and there is no reason to suspect its authenticity as an ancient object.

The original find circumstances of this spearhead are unknown; however, a location in southern Scotland is plausible. Deferring for a moment the question of the possible veracity of the family tradition, if the spearhead was supposedly carried into Flodden in 1513, then it follows that the spearhead was found elsewhere prior to this event rather than at Flodden itself; if anything, this notion is strengthened by the notable absence of Bronze Age evidence during the recent excavations, fieldwalking and metaldetecting at the Flodden battlefields (Northern Counties Archaeological Services 2016). On the other hand, the Chisholme family - to whom it supposedly belonged - held lands in the historic county of Roxburghshire from at least the 13th century (Robson 1998: 79). Even if this spearhead's link with Flodden simply represents much later fanciful family tradition, it is therefore more likely that it signifies a discovery on the Chisholme family estates. We can therefore tentatively suggest that the spearhead was originally recovered from the Scottish Borders. Thirteen contemporary forms of looped spearheads dating to the Taunton-Penard phases are now known from this region (see Coles 1964; Davis 2012) and thus the Chisholme spearhead is in keeping with the known range of Middle Bronze Age spearhead types from the region.

CIRCUMSTANCES OF THE ACQUISITION OF THE SPEARHEAD AND THE PAPER LABEL

The spearhead had been purchased by Professor Thomas in 1959 or 1960 at Wallis & Wallis, an auctioneer's house in Lewes, Sussex, which primarily deals with armouries. It was described as a 'brass javelin point' and according to the auctioneers it had come from a house in Eastbourne, Sussex, being cleared by an elderly widow, possibly of Scottish origin. Upon acquiring the object, Professor Thomas discovered the paper label rolled up inside the socket of the weapon. This is the sum of what is known about the provenance of the bronze spearhead (Cowie 2000a).

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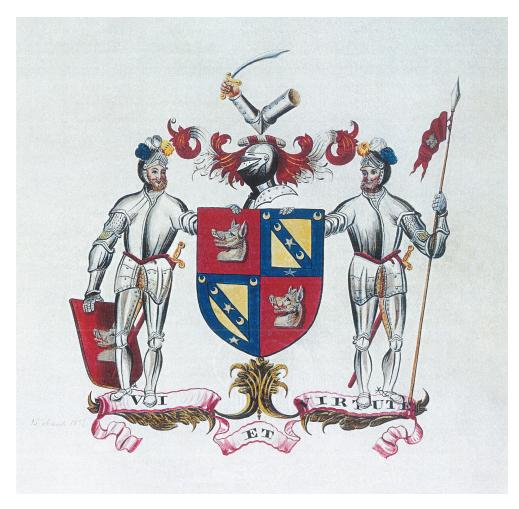
Although it is clearly at best a secondary source, the label itself warrants some consideration. Some time after its purchase, it was suggested to Professor Thomas that the handwriting might be that of Walter Scott, comparison being invited with, for example, the writing on his rather idiosyncratic labels at Abbotsford. Moreover, it is recorded that in May 1819, Scott entertained a Mr Chisholm who was then a Tory candidate for Selkirk burgh (Lockhart 1837: 268f), and reference is also made to Hugh Chisholm in Scott's Tales of a Grandfather (Scott 1836: 372). Partly on this basis and partly because of Scott's literary and historical interest in Flodden, Charles Thomas mooted the plausible and superficially attractive suggestion that Scott might have acquired the spearhead for his own collection. Although the handwriting is of later 18th- or early 19thcentury date, following enquiries with Dr Iain Brown of the National Library of Scotland in 1999 (by TGC), it can be confirmed that the label was not written by Sir Walter Scott. Nor was any hint of a Scott/Chisholme connection found in the course of subsequent research on Scott's archaeological collection (Cheape et al 2003). In short, however attractive the suggestion, no link can be positively demonstrated between Scott and the spearhead.

THE CHISHOLME FAMILY CONNECTION

A further important line of enquiry is offered by the Chisholme family connection proclaimed on the paper label. The history of the Chisholme name and family has been explored elsewhere (Mackenzie 1891; Vernon 1902; Robson 1998), but it is worthwhile reiterating some key points here. The origins of the Chisholme family can be traced back to a Papal Bull in 1254 (Robson 1998: 79; Vernon 1902: 4) and the name 'Chisholme' derives from the lands that were occupied, which probably lay in Roxburghshire (Robson 1998: 79). Robson has established that the Chisholme lands, and by extension their estate, lay south of the Borthwick Water valley, falling within the present day parish of Hawick (ibid); family members from this area are typically known as Chisholme of that Ilk (ibid) or the Border Chisholmes (Mackenzie 1891: 172ff). During the 17th century, the Chisholme family lost the estate of their namesake, though later acquired an estate in the area of the Stirches near Hawick (Vernon 1902: 6-7), again in Roxburghshire. The family line thus had a long-standing position in the Borders over several hundred years. The male lineage ended with the death of John James Scott-Chisholme in the Second Boer War in 1899 (Vernon 1902). It was this that prompted J J Vernon (1902) to offer a detailed account of the history of the Chisholme of that Ilk and of the Stirches as part of a memorial piece published in the Transactions of the Hawick Archaeological Society. As Munro (2000) has admitted. Vernon offers no indication of the source of this history but where facts can be checked they appear correct and Vernon would have no doubt benefited from correspondence with Scott-Chisholme's mother and two sisters who were alive at the time of writing. Of crucial significance to the present paper is that Vernon reports:

Robert and John Chisholme, accompanied their overlord, Sir William Douglas of Drumlanrig, to Flodden Field in 1513. Robert, the eldest son, died with Drumlanrig fighting beside the king, but John, the second son, survived *and brought back the family pennon, the lance-head of which is still in the possession of the present representatives of the family* [our emphasis] (Vernon 1902: 5).

This indicates that a spearhead of some description was in the possession of the Scott-Chisholme family in 1902 - presumably the bronze spearhead in view of the dating of the inscription on the label. A further implication of this reference is that it is clear that a lancehead of some description had been afforded a certain reverence as a family heirloom. Indeed, the two brothers who fought at Flodden are depicted in full military regalia as the supporters of the family arms (Illus 3) (Vernon 1902: 5): the knight on the right is holding a standard tipped with a lance-head, though it is clearly not the same spearhead as that acquired by the National Museum of Scotland. However, a stone relief of the same arms depicts a spearhead more similar in form to the Bronze Age artefact (Illus 4); this



ILLUS 3 The coat of arms of the Scott-Chisholmes of the Stirches, granted to the family in 1853 (image by kind permission of the Court of the Lord Lyon)

relief was removed from the Chisholme estate in the Stirches and is currently held at Hawick Museum.

Such generic depictions do not of course prove that the Bronze Age spearhead is the same as that on the family crest which, it should be emphasised, only dates from 1853 when the family name became Scott-Chisholme (Greenshields-Leadbetter 1923: 72–3; Dr Margaret Collin pers comm). The Chisholme family arms prior to this do not depict the knights (Greenshields-Leadbetter ibid). Nonetheless, the degree to which the inscription can be corroborated, however tenuously, becomes intriguing. There has been some debate about whether a Robert Chisholme existed at the time of the Battle of Flodden (Cowie 2000a, 2000b) and certainly there is some confusion when studying the published family histories (cf Mackenzie 1891; Robson 1998). This, it appears, is because several Chisholmes went by the name Robert or John at the time and in quick succession, whilst others went unnamed in most histories. Illustration 5 summarises the information known for the period between 1436 and 1538 as presented by Mackenzie (1891: 187). Mackenzie notes only one specific date within this timeframe (1526), and charts the line of succession, leaving most family

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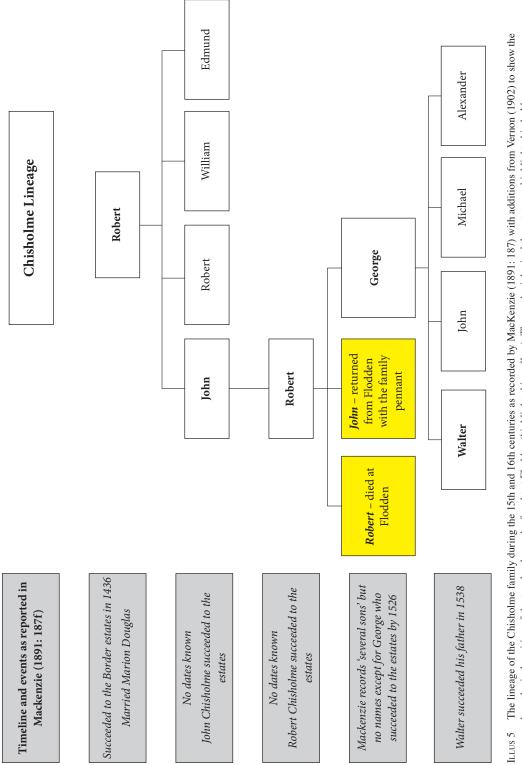


ILLUS 4 Armorial panel depicting the family crest of the Scott-Chisholmes of Stirches (photo: M G Knight, courtesy of Hawick Museum)

members unnamed. This is particularly important as the Robert Chisholme under inspection here never succeeded his father (another Robert Chisholme) and thus was never recorded in Mackenzie's history; instead, the estates passed to George, who was reported to be the Chisholme of that Ilk by 1526 (Vernon 1902: 5). George is noted as one of 'several sons, all of whom apparently predeceased their father' (Mackenzie 1891: 187). These unnamed sons could therefore represent the Robert and John Chisholme who are said to have fought at Flodden, as reported by Vernon (1902: 5) (highlighted in yellow in Illus 5). The loose chronology known for this period suggests it is entirely plausible that Robert and John Chisholme existed and fought in the Battle of Flodden.

If, then, one supposes the spearhead described by Vernon in 1902 and the spearhead acquired by Professor Thomas in the mid-20th century are one and the same, the question remains how the spearhead associated with a long-established

Roxburghshire family ended up in a salesroom in Sussex. Once again, family history may provide some clues. Following his death in 1899, John James Scott-Chisholme was survived by the following female members of the family line: Margaret (his mother), Elizabeth and Christina Madeleine (his sisters). In 1881, Margaret and Elizabeth are recorded on the census as living in Hove, Sussex, with Christina Anderson Scott-Chisholme, sister-in-law to Margaret, and they are described as living on their own means (Dr Margaret Collin pers comm). In 1891 they were living in Folkestone, Kent, whilst in 1901, two years after the death of her brother, Elizabeth was living in Bognor, Sussex, once again described as living on her own means. Margaret Scott-Chisholme died in 1900, whilst Christina Madeleine died in 1932 and Elizabeth Scott-Chisholme died in Bath, Somerset, in 1937 (Hawick Express 1938). The location of the spearhead is unclear during this time, with the only reference that it still survived within the



hypothetical position of the two brothers who fought at Flodden (highlighted in yellow). Those who inherited the estate are highlighted in bold.

A BRONZE AGE SPEARHEAD CARRIED INTO THE BATTLE OF FLODDEN? 55

family being that made by Vernon in 1902. Collin (2012: 21) has suggested that Elizabeth may have had need to pass on or sell the spearhead while in Sussex. If one returns to the auctioneer's comments made to Professor Thomas, in which the spearhead is said to have come from a house clearance of an elderly Scottish widow, it could be speculated that the widow was an acquaintance of Elizabeth Scott-Chisholme at some stage.

Illustration 6 summarises the known and hypothetical trajectories of the spearhead presented thus far. Although much remains speculative, it seems evident that by the late 18th/ early 19th century the spearhead was a Chisholme family possession, that the anonymous author of the inscription on the label around that time must have had some awareness of the history of the Chisholme family, and that it subsequently became a treasured family possession. The key issue is whether its association with the family can really be traced back to the 16th century or whether this is a later concoction as a result of antiquarian speculation during the Enlightenment period.

THE OCCURRENCE OF ANCIENT OBJECTS IN LATER PERIODS

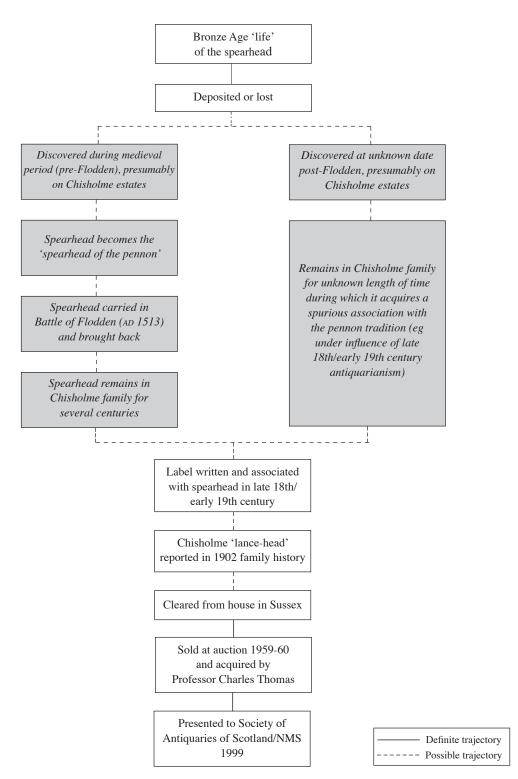
The final strand of this paper is a consideration of the probability that a Bronze Age spearhead deposited or lost in the second millennium BC might be valued and reinterpreted if discovered nearly 3,000 years later in the later medieval period. There are two elements to this: first, affirming that such instances may have occurred; and second, reflecting on how people in the past may have reacted to such objects.

Although it would be tempting to dismiss the idea that a Bronze Age spearhead was found and then curated in the medieval period, there is ample evidence that past populations regularly discovered and reappropriated ancient objects, including earlier Bronze Age objects in the later Bronze Age and Iron Age (Hingley 2009; Knight forthcoming), prehistoric stone axes in the Roman period (Adkins & Adkins 1985; Turner & Wymer 1987), and Roman objects in the Anglo-Saxon and medieval periods (White 1988; Eckardt & Williams 2003; Henig 2008). Such discoveries are fairly commonplace occurrences, referred to in a number of different ways including heirlooms, relics and 'ancestor artefacts' (Caple 2010). The discovery of already old objects was, in many cases, probably incidental during the occupation of previously inhabited areas. A Neolithic carved stone ball found in Norway, for instance, is posited to be a Viking-period find in Scotland that was then transported across the North Sea, perhaps as a 'curio or amulet' (ScARF 2012: 83). Meanwhile, Anglo-Saxon graves were often constructed with reference to Bronze Age barrows (Williams 1998: 92), giving a high chance of discovering Bronze Age objects.

However, Bronze Age objects occurring within a specifically medieval context are rare. Recently a Bronze Age palstave was excavated from a medieval house deposit at Island Farm, Devon; the excavators suggested that the palstave may have been a collected item, perhaps as a charm (Haynes 2016: 25). In another case, the shaft of a Middle Bronze Age spearhead from Ruskington, Lincolnshire provided a radiocarbon date of AD 1040-1270 (2σ) (Needham et al 1997: 86). Needham et al (ibid) note that there is no reason to doubt this date, and the idea of medieval reappropriation is potentially strengthened by the species of wood, Betula sp, which was unique within their dating programme. Two other medieval dates were reported for Bronze Age metalwork (Needham et al 1997: 72, table 4, DoB 6 and 15), although these cannot be considered conclusive. In one case this is due to the ambiguity of determining the object type analysed, and in another it could not be confirmed that the wood was definitely associated with the objects (Dr Stuart Needham pers comm).

As suggested above, on the grounds of the type's distribution, it is possible the spearhead was recovered from the lands owned by the Chisholme family. Whilst a Bronze Age object may be discovered in a much later period, it is more difficult to explain how a 'found object' could then become a 'treasured object' with such a special place in the Chisholme family history. In such situations one must be wary of projecting our modern appreciation of prehistory onto past

A BRONZE AGE SPEARHEAD CARRIED INTO THE BATTLE OF FLODDEN? 57



ILLUS 6 The definite and possible trajectories of the Bronze Age spearhead

populations. Caple (2010) has suggested that some ancient objects in the past might have been seen as 'venerable objects' that were appreciated for their considerable age and mythical value. In the Roman period, for instance, some prehistoric objects were redeposited in Roman temples, such as the Palaeolithic axes from Witham (Turner & Wymer 1987) or the Bronze Age metalwork from Ashwell, Hertfordshire (Jackson & Burleigh 2018: 159–62), suggesting these may have been linked to religious beliefs and practices of veneration (Caple 2010).

Gilchrist (2013) has similarly emphasised that certain objects in the medieval period may have achieved an heirloom status as a result of their recognised age as well as the materials from which they were made (cf Lillios 1999). Gilchrist presented a Viking sword pommel made of whale bone, deposited in the 12th century in a household in York, some 200 to 300 years after its production (2013: 174). She suggested that this object, and other heirlooms, were valued for the implications of the object and its material. As Gilchrist states: 'Heirlooms prompt feelings of family affect, inter-generational memory and a sense of the passage of time between generations' (Gilchrist 2013: 172).

The Chisholme spearhead may represent an object appreciated in such a way. Recognition that it was a weapon of some antiquity, and eventually its supposed association with the Battle of Flodden, may have given it a mythical status that persisted until the end of the family lineage. At the very least, it appears such a mythology was attributed to this object at some point in the later 18th or early 19th century, when the label was written.

The association of Bronze Age weapons with historical conflicts is also known elsewhere. O'Connor and Cowie (1995: 355) note folklore associated with the findspot of a Bronze Age hoard found under a boulder at Kincardine, Abernethy, Inverness-shire. According to tradition, Colonel John Roy Stewart hid his arms and flags there following Culloden; one of the axeheads in the hoard was even believed to be a relic attached to Colonel Stewart's flagstaff (ibid). This case is particularly pertinent to the present discussion as it represents another example of a Bronze Age object associated with a historically significant battle. In another historical context, David Bell (forthcoming) has recently demonstrated that some use-wear on Bronze Age weaponry that was previously assumed to be ancient, may in fact have been caused through use in the Irish Rebellion of 1798. In this latter situation, it is interesting to note that the age of the implements did not actually matter to those using them; instead the recognisable form of blades made it possible to reappropriate them for modern purposes.

The aim of this brief discussion is not to argue conclusively that the Chisholme Bronze Age spearhead was found during the medieval period, subsequently curated and carried to the Battle of Flodden, nor even that it represents an heirloom of the later generations of the Chisholme family, but instead to raise the possibility that such a claim could have a foundation of truth. The idea of retaining heirlooms and venerating artefacts is a common feature in many societies (Lillios 1999; Caple 2010), and the medieval period was no different (Henig 2008; Gilchrist 2013; Robinson & de Beer 2014). Whilst the reaction to such objects inevitably would have varied, and many would have held no significance at all, some were attributed meaning for a variety of reasons.

CONCLUSIONS

It is unlikely that the exact nature of the Chisholme spearhead will ever be known. This article has explored several avenues to try and ascertain the possible veracity of the claim that it was once taken into battle by the Chisholme family. There is certainly a legacy of a treasured lancehead within the family records, and it is this that prompted someone in the 18th or 19th century to write the label which is now associated with the spearhead. That this broadly corresponds with the declining family lineage may not be a coincidence and someone may have been attempting to preserve the family mythology attached to the object. The discovery of a spearhead of this type would not be out of place in the area of the Scottish Borders from which the family originate, but it remains circumstantial whether this is a genuine provenance. On occasion, objects from other eras were inevitably found by later societies, just as they are today, and if nothing else it is fascinating to observe the mythologies that become attached to them; in this regard, the notion of taking a Bronze Age spearhead into the Battle of Flodden is particularly stimulating and intriguing. It therefore seems wholly apt to conclude by repeating a quote one of us has used before (Cowie 2000a), from Mary Monica Maxwell-Scott's (1915) preface to the *Catalogue* of the Armour and Antiquities at Abbotsford:

If in attempting to give an accurate description ... we are compelled to dispel some of those pleasing illusions which almost insensibly grow up concerning curiosities of [this] kind, we do so reluctantly, and, in Sir Walter's words, regret 'to pluck from our memories a rooted Legend'.

ACKNOWLEDGEMENTS

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Storm damage at Craig Phadrig hillfort, Inverness: results of the emergency archaeological evaluation

Mary Peteranna¹ and Steven Birch²

ABSTRACT

In January 2015 severe winter storms caused substantial damage to Craig Phadrig fort (Scheduled Monument 2892) after two wind-blown trees exposed a section of the inner rampart. Prior to consolidation and reinstatement, Scheduled Monument Consent was granted for an archaeological evaluation of the damaged area. This revealed three principal phases of construction, the earliest a massive timber-laced wall burnt in the 4th–3rd century BC. The upper elements of this ruined structure were incorporated into two secondary phases of refortification comprising construction of a palisade along its crest followed several centuries later by reprofiling of the rampart upper bank. The chronology of the second and third phases is more equivocal, with a single 5th–6th century AD radiocarbon date providing a terminus post quem for the erection of the palisade, while the other features indicate activity in the 11th–13th centuries.

BACKGROUND

Wind-blown trees exposed a section of the inner rampart on the north side of the fort on Craig Phadrig (Scheduled Monument 2892; Canmore ID 13486) during winter storms in January 2015. In February 2015, AOC Archaeology and West Coast Archaeological Services conducted an emergency archaeological evaluation on behalf of Forestry Commission Scotland (now Forestry and Land Scotland). The purpose of the fieldwork was to assess the level of damage and to record the nature of surviving archaeological deposits prior to consolidation and stabilisation. Scheduled Monument Consent from Historic Scotland (now Historic Environment Scotland) also allowed for the excavation of a trench across the rampart to compare the damaged section with undamaged deposits and to evaluate the bank of the rampart.

Craig Phadrig is a steep-sided, wooded hill of conglomerate located to the west of Inverness (NGR: NH 6400 4527). This provides a prominent position, overlooking the mouth of the River Ness valley to the east and the Beauly Firth to the north (Illus 1). This landscape forms the southern margin of the wider Moray Firth region, which extends northwards to the Dornoch Firth – a region that the 2nd-century Roman geographer Claudius Ptolemy associated with the *Decantae* tribe. The fort occupies a clearing on the northeast end of the hill and roughly opposes a hillfort site on Ord Hill across the firth to the north-east, while a much smaller earthwork, identified as a motte in the Scheduled Monument description (SM3806), lies at Torvean (Canmore ID 13549), on the north-west bank of the River Ness, some 2km to the south.

In contrast to these other forts, Craig Phadrig displays a markedly rectilinear plan, with parallel sides and rounded ends, an oblong style characteristic of a group of forts in eastern Scotland, from Knock Farril (Canmore ID 12782) overlooking Strathpeffer, 19km to the north, to Dunnideer (Canmore ID 18128) and Tap O' Noth (Canmore ID 17169) in Aberdeenshire, Finavon (Canmore ID 33673) and Turin Hill (Canmore ID 34899) in Angus, and Castle Law, Forgandenny (Canmore ID 26583), above Strathearn in Perthshire (Harding

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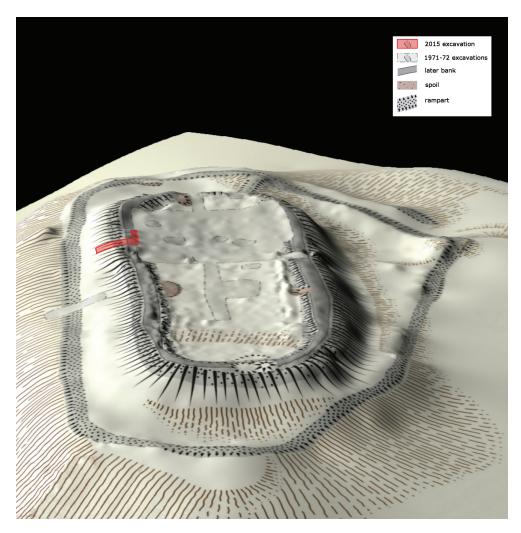
ILLUS 1 Site location plan (contains OS Open Source data)

2004: 85–90). These forts are characterised by their apparent lack of an entrance and massive timber-laced walls, which in most cases have been burnt, displaying varying degrees of vitrification. Research suggests that vitrification was the result of deliberate destruction (Ralston 2006: 143-63; Harding 2012: 188-90), although the method and purpose for this are still under debate. Some of the oblong forts occupy sites that had previously been fortified in the Middle Iron Age and some, like Craig Phadrig, were also occupied in the early medieval period, indicating that these prominently placed strongholds continued to hold significance as locations that could be drawn upon to confer authority (Harding 2004: 90, 232; Cook 2010).

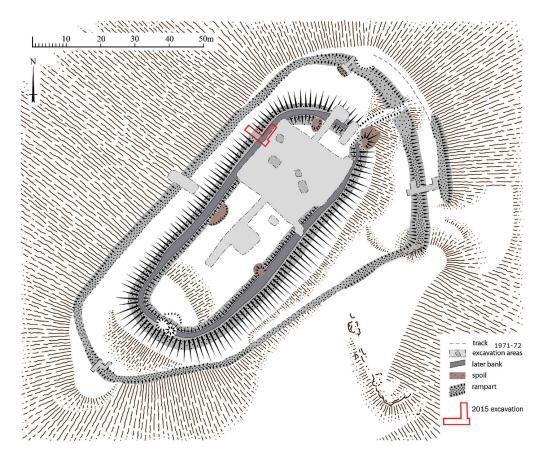
The inner rampart of Craig Phadrig encloses an elongated sub-rectangular area measuring 72m from north-east to south-west by 22m transversely. The rampart itself is largely reduced to a turf-covered bank up to 12m in thickness and 1.4m in internal height. The grass- and brackencovered interior is mostly flat, with a group of trees encroaching on the northern corner of the main rampart from the surrounding woodland. A mostly concentric outer rampart can be traced through the fringes of the clearing in which the fort stands, and a third bank can be identified on the north-east side (Illus 2, 3).

Numerous archaeological surveys and interventions have taken place on Craig Phadrig (Illus 2) and are documented in a report by the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS, now Historic Environment Scotland) (McCaig 2014). The first reference to the fort appears in Thomas Pennant's *A Tour in Scotland 1769* (Pennant 1774: 221), though it must have been well known in the locality before his visit. A detailed examination was undertaken in the 1770s by John Williams (1777), who also excavated at Knock Farril. While this is the first recorded excavation at the fort, there were various other 18th- and 19thcentury interventions that likely resulted in most of the north-east end of the interior being cleared out during these periods.

The first modern excavations were undertaken in 1971 and 1972 by Alan Small and Barry Cottam, who dug a trench through the inner rampart at the centre of the north-east end and along the axis of the fort to roughly halfway along the interior. They also excavated trenches over the outer rampart on the north-east, east and south-west respectively. The excavations were summarised in Small and Cottam's interim report in 1972 and in an article in The Inverness Field Club's *The Hub of the Highlands* (Small 1975). Much of the archive has been lost, but a number of items, including site notebooks, are preserved in the collection of Historic Environment Scotland and are catalogued in the report drawn up by RCAHMS (McCaig 2014: 23–4) and detailed in the Canmore entry. The 1971 excavation revealed that the inner rampart concealed a massive stone



ILLUS 2 A hill-shaded terrain model of Craig Phadrig, showing the location of the various excavations (© Forestry and Land Scotland by Rubicon Heritage, using topographic plan by RCAHMS 2014)



ILLUS 3 Topographic plan of Craig Phadrig by RCAHMS (2014), showing the location of the excavation trench (© Historic Environment Scotland)

wall constructed of larger blocks at the base with smaller stone above. They found evidence for horizontal timber beams extending into the core from the inner wall face (Small 1975: 81-2) and radiocarbon dates were interpreted as evidence that construction took place in the 4th century BC (Small & Cottam 1972: 23). The character of the outer rampart is less clear: vitrified material was apparently present only on the west within both inner and outer revetting walls and evidence for timber lacing was present (ibid: 33-4). Small and Cottam believed that elsewhere on the south-east and north-east it was of secondary construction, and possibly unfinished, comprising 'an embankment of earth, turf and detritus from the inner rampart, enclosed by rough revetments' (Small 1975: 84–5) and accompanied by a third bank around the north-east end. This contrasts with RCAHMS' interpretation (McCaig 2014) that the outer rampart marks the line of an earlier rampart perhaps robbed for the construction of the inner rampart. The sequence of construction of the defences is evidently more complex than these early excavations revealed.

Within the interior, Small and Cottam identified two potential occupation horizons separated by a layer of soil build-up, which most likely represented an abandonment phase. Although much disturbance was noted, the two horizons appeared to represent an Iron Age occupation followed by an early medieval period of use, the upper dated by E-ware pottery and a mould for a hanging bowl escutcheon (Small & Cottam 1972: 42–3). At the north-east end of the interior they uncovered the remains of a structure with a possible earlier sequence of structural remains below it. The associated deposits contained animal bone, peat ash and charcoal, and a bronze pin from the lower occupation layer (ibid: 40-2). Over the 'building horizon' and below the heat-shattered rubble on the interior Small and Cottam also described a distinct burnt turf layer representing the fire that destroyed the rampart. The burnt layer was located on the surface of a soil horizon that continued across the fort (ibid: 15). During the 1971 excavation, a section cut through the inner rampart revealed that it was laid partly on bedrock and partly on till (ibid: 21).

Craig Phadrig was also amongst the first Scottish forts where radiocarbon dating was applied. Taken after the 1971 excavation, the results from seven charcoal samples appeared to broadly confirm the chronology provided by the artefacts, but with modern calibration the margins of error are too wide to be useful, ranging from 800 BC to AD 100, 550 BC to AD 350 and AD 200 to 800 (see Scottish Radiocarbon Database).

FIELDWORK 2015

Root plates from two fallen trees (an ash and a beech) from the January 2015 storm exposed an area of the inner rampart (Illus 4) measuring 7.5m north-east to south-west by 2m transversely.

Loose soil, tree roots and rampart debris were removed from the exposures and sections were cleaned back for recording. An evaluation trench, measuring 9.5m-long north-west to south-east by 1.7m wide, was excavated across the rampart perpendicular to the south-west end of the exposure. Upon completion of the fieldwork, the trenches were backfilled and the rampart was consolidated and reprofiled.

Following excavation, a total of 22 bulk environmental samples were analysed by AOC Archaeology. The environmental finds were composed of charred macroplant remains, charcoal and burnt bone. The results of the analysis (Robertson 2015) are incorporated into this paper. Ten samples were submitted for radiocarbon measurements by Scottish Universities Environmental Research Centre (SUERC). Nineteen samples of vitrified stone were also assessed and catalogued by AOC Archaeology (McLaren 2015; Kyle & McLaren 2016).

TREE EXPOSURES

Excavation and recording of the tree root plate revealed that the uppermost deposits of the rampart had been destroyed in an irregular area 7.5m long by 2.0–2.5m wide, extending along the inner margin of the rampart. The sections exposed the loose upper core of the primary wall. Many of the stones were heat-affected and some were vitrified. With the exception of a short

Laboratory code	Material dated	Uncalibrated date (BP)	Uncalibrated date (BC/AD)	Calibrated date		
GX-2441	Charcoal (n.i.)	2130 ± 110	$180 \text{ BC} \pm 110$	550 cal BC to cal AD 250		
N-1118	Wood (n.i)	2030 ± 100	$80 \text{ BC} \pm 100$	400 cal BC to cal AD 350		
N-1119	Charcoal (n.i.)	1540 ± 85	ad 410 ± 85	cal AD 200 to 800		
N-1120	Charcoal (n.i.)	2250 ± 100	$300 \text{ BC} \pm 100$	800 cal BC to cal AD 50		
N-1122	Charcoal (n.i.)	2280 ± 100	330 вс±100	800 cal BC to cal AD 0		
N-1123	Charcoal (n.i.)	2220 ± 100	270 вс±100	800 cal BC to cal AD 100		
N-1124	Mixed (n.i.)	2320 ± 105	370 вс±105	800 to 50 cal BC		

TABLE 1 Scottish Radiocarbon Database – Craig Phadrig 1971

$\delta^{I3}C\%$	-27.50%	-25.60%	-25.30%	-27.60%	-25.50%	-27.60%	FAILED	FAILED	FAILED	FAILED
Calibrated 2-sigma (95.4%)	AD 416–556	409–235 BC	ар 1036- 1205	AD 1018- 1155	AD 1028- 1183	361–176 вс	FAILED	FAILED	FAILED	FAILED
Calibrated 1-sigma (68.2%)	AD 429–536	402–373 BC	ad 1045– 1165	ad 1022– 1149	AD 1045- 1157	355–199 _{BC}	FAILED	FAILED	FAILED	FAILED
Uncalibrated (BP)	1571 ± 30	2305 ± 29	907±29	967±29	921±29	2188±29	FAILED	FAILED	FAILED	FAILED
Description	Charcoal: birch; lower fill of Ditch [022], under stone layer and intermediate fill (007b)	Charcoal: alder; under (006); over [010] outer wall face; from base of lowest layer of collapse wall core outside of outer wall face	Plant: hazelnut shell from Sample 12; under (016) and over (007b) ditch fill; possible later post setting	Charcoal: birch; under (005); lower fill of Pit [033] which overlies (015) rampart core	Charred nutshell: hazel; under post-abandonment soil buildup (025); upper fill of Pit [028] which overlies upper/main layer of collapsed wall core against inner face	Charcoal: birch; under (024); compact charcoal-rich layer against base of inner wall face – possible hearth; overlies primary layer of collapse (032) against inner face	Bone: animal rib from lowest layer of collapse inner face	Bone: large mammal	Bone: animal rib	Bone: large mammal from rampart core
Context No.	007c	011	018	020	023	031	024	031	023	015
Laboratory code	SUERC-62801 (GU-38672)	SUERC-63281 (GU-38862)	SUERC-62799 (GU-38669)	SUERC-62800 (GU-38670)	SUERC-63280 (GU-38861)	SUERC-63285 (GU-38863)	GU-38674	GU-38671	GU-38668	GU-38673

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TABLE 2 Radiocarbon dates – Craig Phadrig 2015



ILLUS 4 Looking north-east over the tree erosions on the inner rampart (© AOC Archaeology Group)

length of an inner boulder kerb [029] at the northeast end, the damage had removed any structural features that may have been present. There were no other archaeological deposits and no artefacts identified within the exposures.

EVALUATION TRENCH

The evaluation trench (Illus 5–12) proved more informative, revealing that the rampart comprised three principal elements: the 'primary wall' ([010], [013] and (015/021/026)), some 6.5m in thickness by at least 1.8m in height; the vitrified/heat-affected 'upper core' of the primary wall (026) into which a narrow ditch or palisade trench [022] had been cut; and an 'upper bank', defined by a stone kerb [029] on the inside, with traces of a kerb on the outside and possible post settings. In profile, the crest of the rampart appeared as two low banks lying to either side of the ditch [022], the inner portion rising 1.5m above the top surviving course of the outer face of the primary wall. A turf and vegetation layer (001) over a mid-brown sandy soil horizon containing occasional small fragments of heat-affected stone (002)/(025) had formed over the upper bank and associated features, and was interpreted as post-abandonment soil formation over the area.

The upper core of the primary wall (026) to both sides of the ditch was formed by heat-affected and vitrified stone cobbles and fragments – remnants of the upper section of the rampart after its destruction. Context (021) on the north-west side and Context (015) on the south-east side of the rampart were the same as (026), forming the lower deposit of the wall core between the faces, differentiated because of a noticeably smaller amount of vitrification and for the purposes of sampling.

The excavators believed that the upper core had been reprofiled into a bank supported by a low kerb of stones [029] on its inner margin. Immediately outside the kerb, a probable post



ILLUS 5 Excavation trench, facing north-east (© AOC Archaeology Group)

hole [033] cut through the lower rampart wall core (015). It contained upright packing stones within a predominantly oak charcoal-rich fill (005/020), possibly representing the presence of an in situ burnt post (Illus 13). Small amounts of birch and alder charcoal were also present in the pit and a single entity birch charcoal sample from the lower fill (020) of the post hole provided a radiocarbon date of cal AD 1018–1155 (95% probability, SUERC-62800).

A deposit (016) which contained oak charcoal was identified on top of the outer portion of the upper bank and was initially interpreted as the fill of a possible pit or post hole. Excavation of the deposit revealed several large stones that had slumped into the top of the underlying palisade trench. These may have formed a collapsed revetting wall on the outer margin of the upper bank. Removal of this deposit and the adjacent deposit (007a) revealed a distinct cluster of vertical and angled stones (018/019). These were interpreted as packing stones representing a secondary post setting cut into the top of the ditch [022]. Deposit (018) contained oak charcoal and carbonised hazelnut shell, a sample of which provided a radiocarbon date of cal AD 1036-1205 (95% probability, SUERC-62799).

Also on the outer portion of the upper bank, two surface deposits (012) and (014) may also have formed the fills of shallow pits or post holes. A small amount of alder charcoal was present in (014). The mixed condition of the deposits and the unclear cuts made these possible features difficult to interpret, which was likely due to the voided nature of the rampart core into which any posts or pits would have been cut. The kerb/stone revetment and post settings identified on the upper bank were interpreted as the remains of a later refurbishment of the circuit.

The earlier palisade ditch [022] cut through the eroded upper core of the primary wall. It was almost V-shaped in section, with fairly steep sides measuring 1.1m wide at the top, narrowing to 0.2m at the base. The upper fill of the ditch (007b) was packed with stones, many of which were steeply inclined into the feature, and contained a charcoal-rich fill from which no vitrified material was recovered. A distinct change in context was noted within the lower third of the fill of the ditch, with smaller stones and grittier sediment (007c) forming a firmer packing in the narrowing base.

Oak charcoal (28.3g) formed 97% of the carbonised remains within the fill of the ditch



ILLUS 6 Looking south-west over the surface of the upper bank, mid-excavation of the ditch [022] showing the compact stone layer in the top of the fill (007b) (© AOC Archaeology Group)



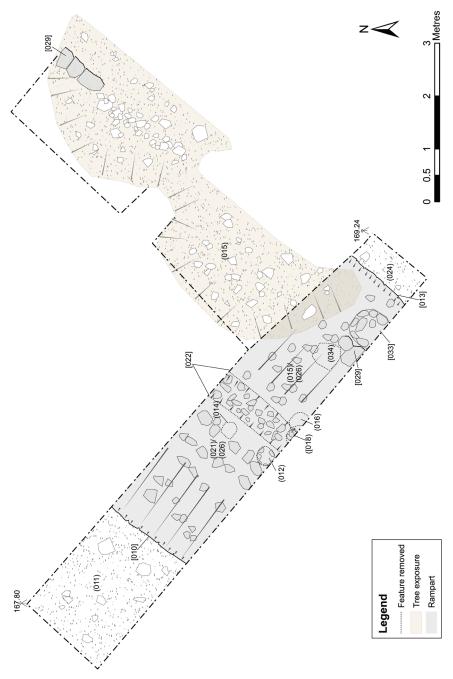
ILLUS 7 Looking south-west over the tree erosions and evaluation trench, recording in progress (© AOC Archaeology Group)



ILLUS 8 Looking over the north-east-facing section through the upper rampart banks, showing the palisade slot at the centre, facing WSW (© AOC Archaeology Group)

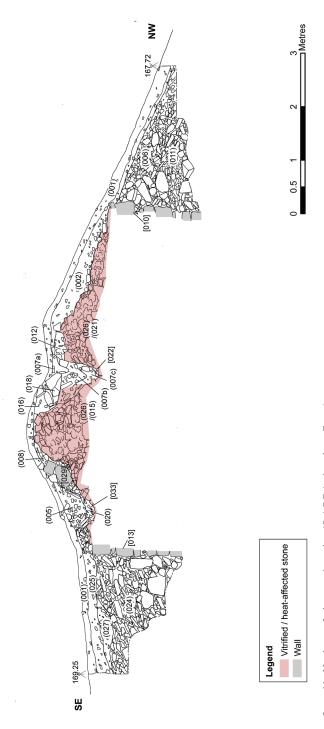


ILLUS 9 Looking over the south-west-facing trench section, showing the tree root plate exposure (© AOC Archaeology Group)



ILLUS 10 Trench plan (@ AOC Archaeology Group)

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ILLUS 13 Close up image of the upper bank [008] with Post hole [033] to left (© AOC Archaeology Group)

and was possibly derived from in situ burning of timber posts. The predominance of oak charcoal and tightly packed stones inside the ditch, together with the steep shape of the cut, suggested to the excavators that it had held vertical timber posts most likely forming a palisade. The palisade was cut into the upper core (026) of the primary wall and there was a clear separation between the vitrified material within the core of the wall and the fill of the ditch, which contained a distinct lack of vitrified and heat-affected stone. A single entity birch charcoal sample from the basal fill (007c) of the ditch provided a radiocarbon date of cal AD 416-556 (95% probability, SUERC-62801). Although this result correlates with the previously known evidence for early medieval occupation of the interior of the fort (Small & Cottam 1972), the date can only provide a terminus post quem and may not date the time at which the palisade was erected.

Excavation of the upper core (026) of the wall revealed concentrations of heavily vitrified stone interspersed with areas of more shattered and fragmented burnt stone. These areas indicate where the burning was most intense, potentially representing the locations of structural timbers. Within the surface of the lower north-west

section of the wall, the heat-affected core (021)contained what appeared to be longitudinal alignments of large, heat-affected and partially vitrified boulders crossing the trench (Illus 14). These were also believed to demarcate areas where the effects of heat within the core of the rampart wall were more intense and may represent elements of the timber lacing. Other observations in the primary wall core (015) on the south-east side of the wall included the presence of small fragments of burnt mammal bone and a possible pit represented by Deposit (034); the cut for the pit, however, was not identified in the loose core, and its significance is unknown. The deposit contained small fragments of oak charcoal and a minor amount of hazel/birch charcoal fragments.

The range of wood species recovered from all contexts on the site was varied, although oak appears as the favoured species associated with the rampart features. In general, this supports the likelihood that oak timbers formed structural elements of the primary wall and its later refurbishments, while the presence of birch, alder and hazel probably represents material utilised as fuel for fires, in the case of the primary wall for the event that caused its destruction and vitrification.



ILLUS 14 Looking south-east over the rampart core, showing stone alignment and partially vitrified fill (© AOC Archaeology Group)

WALL FACES

Where the outer face of the primary wall was exposed in the evaluation trench it was still standing at least 1.8m high. The upper two courses of the wall face [010] were found to have been displaced outwards, most likely during the destruction event, and excavation down the vertical face of the wall involved the removal of collapsed facing stones and loose rubble, including some large fragments of vitrified material. Against the outer wall face, the upper collapse layer (006) contained more mixed material of sandy loam and stone, while a distinct separation was noted between it and the lower collapse layer (011) resting against the face, which contained mostly loose stones in a sandy matrix and contained many air-filled voids. The larger fallen facing stones from the wall were found lying at various angles in this matrix, with some larger slab-like stones lying vertically against the wall face. Interpreted as the initial layer of collapsed stonework from the primary wall, Context (011) also contained large chunks of vitrified material and heat-affected stone. In contrast, the material built up against the inner wall face contained little vitrified stone. This may indicate that the upper levels of the wall generally collapsed outwards during the destruction event, and that some of the material was cleared from the interior of the fort during its subsequent reuse. Within the collapse deposit (011), 30.1g of fragmented birch and alder charcoal were recovered. A single entity sample of alder charcoal from the base of the collapsed material provided a radiocarbon date of 409-235 cal BC (95% probability, SUERC-63281). This material most likely relates to the burning and collapse of the primary wall, providing a terminus post quem for the fire that destroyed it.

The outer wall face comprised courses of large boulders, the joints packed and pinned with smaller stone fragments (Illus 15). The facing stones were larger in the lower courses. There was no visible evidence in the upper courses for the sockets of horizontal timber lacing, but, towards the base of the excavation, two courses of large boulders were separated by pinning stones with voids between them. These voids may represent the locations where horizontal timbers incorporated into the wall core emerged through the face. Although some of the facing stones in the wall showed evidence for fire damage, including cracking, spalling and discolouration, none of them had been vitrified.

Excavation against the inner margin of the primary wall uncovered the face [013] standing at least 1.6m in height. While the construction was similar to the outer face, overall the stonework comprised smaller stones and displayed a slightly poorer quality of build (Illus 16). The facing stones showed some heat damage in the form of cracking and reddening, but no vitrification. In fact, very little vitrified material was found in the loose sand and stone (024) that had built up against the inner wall face and which included collapsed stones lying at all angles. Six small fragments of burnt and unburnt mammal bone were found in this matrix. A clear context change at the base of Context (024) revealed a dark soil layer (031) at the foot of the face. This contained further collapsed stone that displayed more evidence of vitrification and heating. It contained 25 small fragments of burnt mammal bone, including a pig molar and a small amount of birch and oak charcoal fragments. A single entity birch charcoal sample, taken from Layer (031), located against the inner wall and within the primary collapse layer, provided a radiocarbon date of 361–176 cal BC (95% probability, SUERC-63285).

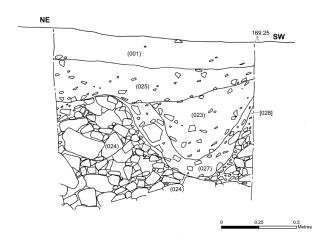
During excavation of the inner wall face a U-shaped pit [028] was identified in the southeast section of the trench (Illus 17). This was interpreted as a fire-pit, sunk into the top of the rubble. The dark, charcoal-rich primary fill (027) contained 131.8g of oak charcoal, large fragments of which were interpreted as a



ILLUS 15 Outer wall face (© AOC Archaeology Group)



ILLUS 16 Inner wall face (© AOC Archaeology Group)



ILLUS 17 North-west-facing trench section (© AOC Archaeology Group)

possible vertical stake burnt in situ. The upper fill (023) comprised a yellow to bright orange peat ash deposit containing 19 small fragments of mammal bone, one of which was identified as sheep/goat; two fragments of burnt hazelnut shell and a minor amount of birch charcoal. A sample of burnt hazelnut shell taken from the upper fill (023) of the pit provided a radiocarbon date of cal AD 1028–1183 (95% probability, SUERC-63280), thus relating to the later occupation of the site during the medieval period.

INTERPRETATION

The scale of the wall forming the core of the inner rampart at Craig Phadrig is quite staggering, measuring 6.5m over the inner and outer faces. Estimations based on the surviving height of the faces and the quantity of collapsed stone adjacent indicates that the wall could have reached a height of 4-5m externally, and over 3m internally. There was no trace of a wooden palisade or breastwork built into the upper works of the primary wall, although the reduction to its present height by as much as 2m would most likely have destroyed any evidence of such a feature. Based on the two charcoal samples obtained from layers interpreted as the initial collapse of the primary wall during the fire/vitrification event, radiocarbon dating results provided evidence that it was destroyed during or after the 4th-3rd century BC.

Substantial amounts of the stone forming the primary wall core had cracked under the effects of heat and frequent fragments of vitrified, fused masses of stone were identified. Pockets of more intense vitrification within the wall core represented locations where the heat from the fire had the greatest effect, and some of these are likely to indicate places where structural timbers had burnt in situ. In so far as the core of the primary wall was examined, vitrified stone appeared most concentrated within its upper section, whereas the underlying wall core showed only the reddened and cracked effects of heat, with decreasing amounts of vitrified material.

Later modification to the upper parts of the heavily vitrified primary wall included the cutting of the ditch to hold a palisade, which may have been built with upright oak timbers which later burnt down, thus accounting for the high oak charcoal content found within the fill of the V-shaped foundation trench. It is possible that the palisade was burnt down during the early 5th to mid-6th century AD, if the radiocarbon date from the birch charcoal sample taken from the base of the foundation trench is taken at face value. This, however, can be no more than a *terminus post quem*, and it is possible that the charcoal could be residual in the feature.

The deposits relating to the remodelling of the upper core, including revetting stones [029]

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and the potential collapsed stones on the outside of the bank, have not been radiocarbon dated, although the hazelnut shell sample recovered from Context (018), located below the collapsed stones, provided a date range from the early 11th to the early 13th century AD. It is clear that the upper bank is the remains of a crudely built rampart, and it is worth recalling that Small also believed that he had recovered evidence that the primary rampart wall had been partly reconstructed (Small 1972). Other evidence supporting the reoccupation of the site at this date is provided by the post hole setting immediately adjacent to the inner kerb of the upper bank, material from which similarly returned an early 11th- to mid-12th-century radiocarbon result. Furthermore, the fire-pit that cut into the rubble layer nearby in the interior also returned an early 11th- to late 12th-century radiocarbon date.

DISCUSSION

Excavation through the surface of the rampart provided the opportunity to record its profile in detail, while also allowing limited investigation of the stratigraphic sequence. This reveals a more complex sequence than was previously recorded, supported by a series of new radiocarbon dates. This provides evidence that sometime after the burning and destruction of the massive primary rampart wall in the 4th to 3rd century BC, the circuit was refurbished with a palisade followed by a roughly constructed bank or rampart. While the date of the destruction of the primary rampart appears relatively secure, the precise dating of the later phases of construction proved more difficult to interpret. However, the corresponding radiocarbon dates indicate that there were clearly phases of activity in the early medieval and medieval periods.

The results broadly support those of the 1970s excavations, which described a wall built with local stone some 6m thick and comprising two stone-built revetments enclosing a rubble core, with larger stonework at the base of both faces and evidence for horizontal timber beams in the inner face (Small 1975: 81). Small and

Cottam's description of the collapse of stone against the inner and outer faces also compares favourably to the 2015 results. On the inside of the rampart, they described material consisting of heat-affected stone and 'extremely few fragments of vitrified material', and observed that the effects of heat on the inner face was not as extensive as on the outer face. They also noted that 'animal bones and teeth' were found throughout the rampart core to the base of the wall (Small & Cottam 1972: 21-3). Along with the results in 2015, where small mammal bone fragments were recovered from in situ wall core and primary collapsed material, this raises potentially interesting questions about the incorporation of this material.

Similar observations had been made previously at Finavon, in Angus, where the walls were around 6m thick (Childe 1935). The wall heights here survived up to 3.6m internally and 4.8m externally, with vitrification confined to the upper parts of the walls and extending up to 1.7m into the core. As at Craig Phadrig, the stones composing the higher courses of the faces are smaller than the blocks forming the base and the collapse layers outside of the rampart comprised loose stone piled against the wall faces at all angles, with some slabs lying vertically as a result of a sudden collapse. There were also noticeable gaps in the wall face, but no clear evidence of timber beams in the walls (ibid). In contrast, the excavations at the end of the 19th century at Castle Law, Abernethy (Canmore ID 27917), Perthshire, uncovered clear sockets for horizontal timbers running from front to back and longitudinally (Christison & Anderson 1899; Cotton 1954; Feachem 1963). More recent excavations at Dun Deardail (Canmore ID 23727), near Fort William, revealed a timber-laced wall at least 5m thick and 2.8m high. Timbers charred in situ and voids within the vitrified stone provided evidence for the lacing, while evidence for medial faces within the core was interpreted as additional structural support. Again, the most intense vitrification was noted in the upper parts of the core (Humble 2015).

Small and Cottam obtained a radiocarbon date (N-1122) that calibrates to 800 cal BC-cal AD 0

(Scottish Radiocarbon Database), described as 'from a carbonised horizontal beam lying below the rubble of the rampart fall and close to the base of the inner face of the rampart' (Small & Cottam 1972: 23). Two further dates described respectively as 'from charcoal obtained from beneath the base of the inner face of the rampart' and 'from charcoal from beneath the rampart' (ibid) (N-1123 and GX-2441) calibrate respectively to 800 cal BC-cal AD 100 and 550 cal BC to cal AD 250 (Scottish Radiocarbon Database). While these dates are now of little more than historical interest, they roughly bracket the new dates of 361-176 cal BC (SUERC-63285) and 409–235 cal BC (SUERC-63281) from samples recovered from the base of the rubble collapsed against the inner and outer faces of the primary wall. The precise origin of the alder and birch samples dated is uncertain, potentially from parts of structural timber or wood gathered to fire the fort. Overall, they probably indicate that the primary wall of the inner enclosure at Craig Phadrig was destroyed during the 4th-3rd century BC, but give no clue as to how long before that date the wall was constructed. Unfortunately, none of the animal bone samples recovered during the 2015 excavation, which could have provided more security for the dates, were successful when submitted for radiocarbon dating.

Research into vitrified forts has led to the deployment of various scientific dating techniques, from radiocarbon dating charcoal from the destroyed rampart (Mackie 1969; Small & Cottam 1972; Wedderburn 1973), to dating the actual vitrification event by thermoluminescence (TL) (Sanderson et al 1988) and archaeomagnetism (AM) (Gentles 1993). None of these techniques is without its problems, and the results have not only ranged widely from before 2000 BC to AD 1000 (Sanderson et al 1988: 315; Ralston 2006: 150-1), they have proved inconsistent, the radiocarbon and TL dates from Finavon being at variance by at least 1,000 years (RCAHMS 2007: 102). As a result of such inconsistencies, further research into the application of TL to the dating of vitrification (Kresten et al 2003) indicates that the application of too little or too much heat to the sample in the destruction of a timber-laced rampart or wall leads to dates that are too old or too young respectively (see review in Ralston 2006: 151). In essence, the samples are not reliably zeroed by the burning of the rampart and the dates from this technique are unreliable.

In contrast, Gentles' AM dates from four oblong forts (Tap O' Noth, Finavon, Knockfarril and Craig Phadrig) appear generally consistent, indicating vitrification occurred in the closing centuries of the 1st millennium BC (Ralston 2006: 151; Cook 2010: 81). In the light of Cook's evaluation work at Dunnideer, Aberdeenshire, one might query whether this consistency is merely a reflection of the small sample size. Excavation of a lower layer (C1003), interpreted as primary material containing a mixture of collapsed rampart and fuel deriving from vitrification of the rampart, provided 2-sigma calibrated dates of 370-160 cal BC and 390-190 cal BC. However, the contexts and the dates are comparable to those from the primary wall at Craig Phadrig, and while the dates themselves relate to when the wood was felled, they have been interpreted as a reasonably close terminus post quem for the destruction of the ramparts and a broad date for the use of the fort (Cook 2010: 85-6). Six AM samples from Dunnideer, however, gave a much broader date range of 606-257 BC (Cook 2010: 86). Supposedly representing the destruction event itself, they imply considerably less precision for the application of this technique than the interpretation that has been placed on Gentle's results.

The later occupation of Craig Phadrig in the early medieval period is demonstrated by both radiocarbon dating and artefacts. A date of cal AD 200–800 (N-1119) (Scottish Radiocarbon Database) was obtained during the 1971 excavation for charcoal from the 'upper occupation layer' (Small & Cottam 1972: 45). Wood from the 'sterile horizon' (ibid: 39) below this layer provided a date (N-1118) that calibrated as 400 cal BC to cal AD 350 (Scottish Radiocarbon Database). The 2015 radiocarbon date of cal AD 416–556 (SUERC-62801) obtained from a sample within a secure context at the base of the palisade ditch provides a *terminus post quem* for the erection of the palisade and indicates that the circuit of the defences was refortified during this period.

CONCLUSION

The evaluation carried out at Craig Phadrig has provided firm evidence for destruction of the fort during the 4th–3rd century BC and reaffirms earlier interpretations based on the excavations by Cottam and Small. While this similarly falls within the 4th–2nd-century BC dates for Dunnideer, the extent of the primary period of use of the fort at Craig Phadrig is unknown.

A recent upsurge in research, development and survey work has provided increasing evidence for the reoccupation of forts in northeastern Scotland during the early medieval period. Although the mid-1st-millennium AD TL date from Finavon should probably be dismissed as unreliable (contra Harding 2004: 88), recent work by Cook (2013) in Strath Don, Aberdeenshire, has shown the reoccupation of forts there during this period to be significant. Cook suggests that during the early medieval period, the regional variation of hillforts and smaller numbers of larger sites is connected with either discrete, contemporary political units or functional/chronological differences (Cook 2013: 344-5). Other research into 5th-6thcentury Pictish power centres (Noble et al 2013) discusses the role of enclosures in Pictland, with specific emphasis on the importance of a small fortification at Rhynie, Aberdeenshire (Canmore ID 281408), as an elite site. Forts on inland hills and coastal promontories, including Burghead, Moray (Canmore ID 16146), and a number of small ringforts, are all dominant site types during this period (ibid). The current evidence of refortification at Craig Phadrig during the early medieval period places it firmly in this context and must relate to what was happening in the wider landscape.

Finally, the three 11th–13th-century radiocarbon dates from Craig Phadrig are compelling evidence of a later medieval occupation and what appears to be a refurbishment of the circuit of the fort. Apart from the walls of major castles, such as at Dunnideer, visible evidence of medieval or post-medieval occupation in forts is usually limited to an occasional rectangular footing, but the radiocarbon dates from Craig Phadrig provide tantalising evidence that there was a more significant enclosure here. Similar structural evidence has been recovered from Castle Craig, Perthshire (James 2011a, 2011b), though the significance of these potential power centres for local lordship and the assertion of power remains to be unravelled.

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Interdisciplinary approaches to a connected landscape: upland survey in the Northern Ochils

Michael Given¹, Oscar Aldred², Kevin Grant³, Peter McNiven⁴ and Tessa Poller⁵

ABSTRACT

The key to understanding a landscape is through its connections, which tie together people and environment within and beyond that landscape and across many different periods. This is particularly true of the northern face of the Ochil Hills in central Scotland, which is characterised by dense networks of connections between lowlands and uplands, local and regional. To trace those connections we integrate the results of walkover survey, aerial archaeology, excavations, documentary analysis and place-name analysis, revealing significant continuities and differences in the networks and relationships that have connected this landscape across time and space. Iron Age hillforts used their prominence and monumentality to guide people along very specific routes across the Ochils. Regular seasonal movements of cattle and herders in the medieval and post-medieval periods were closely related to the agriculture and settlement they encountered on the way: this interaction can be clearly seen in the elaborate intertwining of paths, braided cattle tracks, farmsteads and enclosures, most strikingly in the 18th century. Such intricate connections across the landscape are equally keyed in to the specifics of particular locations and to much broader networks and historical change.

INTRODUCTION

The Ochil Hills in central Scotland are striking not just for their topographic diversity and historical depth, but for the extent to which they are highly connected across both place and time. These connections run from the valley floor to the Ochils' central ridgeline, from the local area to the wider region and sometimes across the globe, and often from prehistory to the medieval and post-medieval periods. Routes, nodes and meaningful places generate these connections by leading and propelling people and animals across the landscape, and by enabling both persistence and transformation in people's relationships with the landscape across time. This article investigates connected landscapes in a range of periods from prehistory to postmedieval, focusing on the northern slopes of the Ochil Hills in Perthshire and using data acquired by the Upland Survey component of the 'Strathearn Environs and Royal Forteviot' project (SERF) (Illus 1). Specifically, we explore the interrelationships between different land activities, such as animal husbandry, settlement, place-making and movement, by addressing these questions:

1. How do paths, tracks, enclosures and boundaries facilitate and constrain movement between lowlands and uplands?

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ILLUS 1 Walkover survey in 2010 above Thorter Burn, looking north over Strathearn. The lone ash tree in the centre marks Scores Farm; the village on the right is Dunning (Michael Given)

- 2. What role do regular patterns of movement play in the local and regional landscape, society and economy?
- 3. How do earlier patterns of movement and activity within the landscape affect later ones, in the long as well as short term? How can we understand the persistence of places?

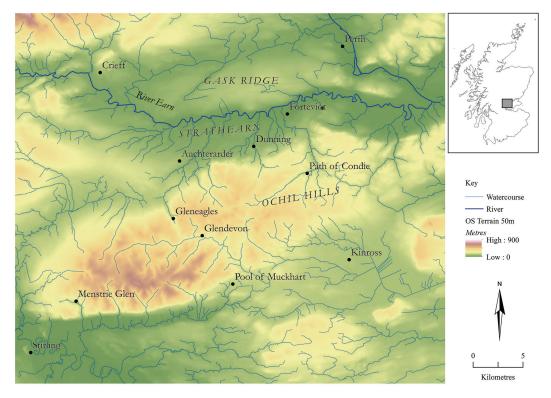
Our starting assumption is that uplands such as the Ochil Hills do not have to be marginal, isolated or remote (Campbell et al 2002: 111; Davies 2007: 2053). Two 17th–19th-century farmsteads within our study area, for example, have been characterised as exactly that; yet the authors' own analysis shows how integrated they are in a social and economic network stretching as far as London and Barbados (Turner & Williamson 2015–16). Our goal is to identify and understand the interconnections, rather than assuming either marginality or integration. These connections are particularly important when dealing with upland areas, where the key issue of relationship with the lowlands is often neglected (Davies 2007: 2060).

Local studies such as ours give resolution and focus when the identification of broad regional trends can smooth out such local particularities (Campbell et al 2002: 113; Davies 2007), while simultaneously demonstrating that the intricacy and elaboration of social networks embrace all scales from the micro to the global (Orser 2009).

The idea of artefacts and monuments having 'biographies' that express their changing networks of connections is now a familiar one (eg Gosden & Marshall 1999; Joy 2009; Witcher et al 2010). The same, of course, applies to landscapes, though in a much more complex fashion than the usual term 'palimpsest' implies (see, eg, Samuels 1979; Gibson 2015; Kolen et al 2015). We are interested not just in the process of landscape change, but in the connections between different pasts and different presents, such as the later impact of the Iron Age hillforts, and the interaction between enclosures and tracks of differing dates. Such a diachronic analysis gives insights into the ways that material things and places persist and adapt to changing conditions through time.

To achieve a robust and nuanced understanding of this very wide range of connections clearly requires the collaboration of researchers from a variety of disciplines. Given the long establishment of disciplinary boundaries and the fast-moving nature of our research environment, interdisciplinary scholarship has to be flexible and fluid; this is, indeed, the 'holy grail' of landscape studies (Jones & Hooke 2011). The collaborative writing of this article has worked towards the critical and reflexive integration of the different disciplines and perspectives of its authors: aerial survey; systematic walkover survey; excavation and measured survey; digital spatial analysis; place-name studies; and documentary and cartographic history. In what follows we synthesise the results of this integrated research to examine the issues of connectivity and mobility in the Northern Ochils across time and space, rather than trying to pursue every facet of the complex history of human activity and occupancy across prehistory and history.

The 'Strathearn Environs and Royal Forteviot' project (SERF) was a major research and teaching project that worked in Strathearn and the Ochils from 2006 to 2017, led by the University of Glasgow (Illus 2) (Driscoll et al 2010; Maldonado 2017; Brophy & Noble nd; Brophy & Wright nd). A key aim of the overall project was to develop a better understanding of the chronology and character of the early prehistoric complex of ceremonial monuments at Forteviot and its influence on the later development of a Pictish royal centre. Fundamental to the understanding of the ebb and flow of Forteviot as a centre of power and ceremony in the past was a wider landscape perspective. A related aim of the SERF project, therefore, was to examine long-term shifts of power, ceremony and settlement in the surrounding environs, covering a much longer time frame.



ILLUS 2 Location map showing the context of the research and places mentioned in the text. Background: EDINA Digimap (Oscar Aldred)

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Brief surveys had already been carried out in our area, mostly preceding potential windfarm development or afforestation (Lowe & Dalland 1998; Hind 2004; Turner & Williamson 2015-16). RCAHMS carried out a rapid survey in the Glendevon area between 1996 and 1997; this was entered into the National Record of the Historic Environment (NRHE) in 1998, but the project remains unpublished in written format. More importantly for our approach and interpretation, the comprehensive survey and historical analysis of Menstrie Glen was carried out by RCAHMS just 20km south-west of our area (Cowley & Harrison 2001). The features and patterns they recorded show substantial similarities to what we identified, and they had the advantage of much more intensive recording and a more comprehensive historical archive. Our own goals were to identify any differences to Menstrie Glen, demonstrating the importance of local variation as mentioned above; to engage with the archaeological material in the comparative absence of full estate archives; and to build on their work by seeing how a theoretically engaged and analytical approach can move forward our understanding of this highly connected landscape.

METHOD AND BACKGROUND

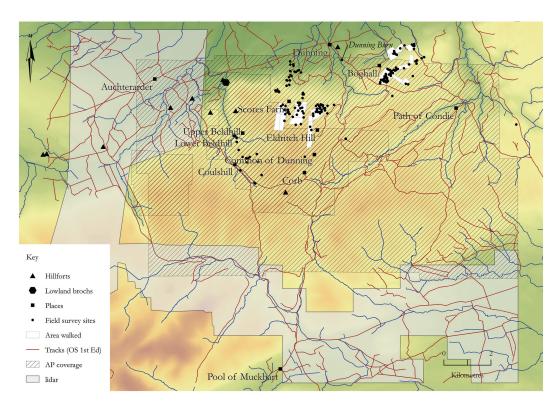
The overall methodological aim of this article is to integrate a wide range of methods and perspectives critically, in order to explore the interconnections between different elements of the study area landscape. We do this in the context of a teaching project, part of the SERF field school, which often had to prioritise student learning over speed and coverage. This, however, had the benefit of including extensive discussion about landscape and its interpretation, and some reflection and experimentation with methods. During fieldwork we mainly used longstanding, analogue techniques of walkover and filling in pro formas, to maximise student engagement with the landscape. To this we have added layers of documentary and place-name analysis, along with the capture, transcription and interpretation of aerial imagery.

The core of our ground survey methodology was to carry out systematic and intensive

walkover survey across six different areas of the parishes of Auchterarder, Dunning, Forteviot and Forgandenny (Illus 3). A line of between four and 14 walkers, 20m apart, walked across specific areas defined on the map ('Areas walked') and flagged any potential sites or features of interest. We then recorded all those that merited it using a pro forma, along with sketch plans and drawings; site numbers are prefixed 'US' for 'Upland Site' (though preliminary field reports use 'SF', a contraction of 'SERF'). We complemented this by investigating and, where appropriate, documenting the main known sites and features across the study area, and fuller recording and mapping of sites, features and areas of particular relevance to our research interests (eg Scores Farm and Coulshill; see below). A database and GIS of sites allowed analysis of distribution patterns and change over time.

The ten hillforts in the wider environs of Forteviot (Illus 3) form a notable type of prehistoric monument that has survived in this landscape, located in the upland zone or at its fringes and showing some striking contrasts to the way mobility patterns are expressed in later periods. Patterns of recovery and preservation have clearly impacted the identification of other types of prehistoric sites in the Ochils, of which there are only a few scattered examples (Cowley & Harrison 2001: 14). Less substantial structures, in both size and material, would have been more susceptible to obliteration by the later agricultural and pastoral practices that we discuss below. In the high moorlands, very little human evidence from any time period has been identified within the rough vegetation.

Working within the constraints of the known dataset and considering hillforts as significant monuments of their time, a key aim of the SERF investigations was to explore shifts in monumental expressions of power. Our main method was targeted excavations of the ramparts of each site, augmented by detailed measured surveys by Historic Environment Scotland and selective geophysical analyses. Exploring the landscape setting of each of the hillforts involved a combination of field visits and GIS-based examinations of viewsheds and topographic prominence (Poller et al 2016).



ILLUS 3 Map showing coverage of the different data sets: areas walked, recorded sites, hillforts and brochs (which extend beyond this map), tracks, and coverage of aerial photographs and lidar (Background mapping: EDINA Digimap. Airborne Mapping: © Historic Environment Scotland) (Oscar Aldred)

The aim of the aerial survey was to add further reconnaissance imagery to the project and to map the surviving archaeological remains across an area of 300km², largely carried out independently of the archaeological and historical sources associated with the Ochil Hills. The aerial survey provides a link between the prehistoric and historic regional analyses, and the documentary sources, to tease out the development of this landscape. The main sources of information were the Ordnance Survey vertical photographs (OS/69/0233, flown June 1969, and ASS/61289, flown May 1989) that were subsequently georeferenced, and 25cm orthophotographs that were captured in c 2013–17. In addition, for a few large block areas under investigation, we used Scottish Government 1m-resolution lidar data to identify archaeological features. This aided the identification of settlements, field banks, trackways, and other features visible (and just visible) as earthworks on the surface of the landscape. Mapping was conducted systematically across the area using the above sources in GIS, supported by oblique aerial photographs across several sorties flown between 2015 and 2016. The final airborne mapping that was created between May 2016 to May 2017 is archived in the NRHE at Historic Environment Scotland (Ochil Hills Airborne Mapping project: Event ID 1022167).

The approach to the documentary research was one of historical landscape archaeology, aiming to understand the archaeological evidence in the landscape and documentary evidence *in dialogue*. This is done by interspersing periods of field and documentary research and allowing each to direct the other. This means that it is the landscape that leads the process, rather than preconceived historical meta-narratives about the place and period. Rather than the landscape being

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the result of abstracted historical processes, change in the landscape should be understood in terms of the individuals and groups who actively effected it (as demonstrated in, eg, Cowley & Harrison 2001; Boyle 2003; Dalglish 2003; Geddes & Grant 2015). The basis of this was an extensive survey of primary sources from before 1100 to the post-medieval period by historian Nicholas Evans (2008). This included chronicles and king lists, charters, papal documents, exchequer rolls, tacks and rentals, testaments, travellers' accounts, descriptions and maps. Evidence from the medieval period is far scarcer than for later periods.

Place names can be a great aid in helping historians and archaeologists understand rural settlement and society in the Middle Ages and beyond to the cusp of the Agricultural Improvements and Industrial Revolution in Scotland in the late 18th and early 19th centuries. Not only do they give us clues to language and landscape use, but they also indicate important aspects of religious and social organisation that would otherwise have gone unrecorded (Hall et al 1998: 139). The methodology behind place-name research involves examining and interpreting early spellings (or forms) of place names found in documents and maps (see Taylor 2016: 69-86 for more details). Often the early forms can give us clues as to what a place name means and, generally speaking, the closer we are to the language in which the place name was coined (in this area either Pictish, Gaelic or Scots), the greater the chance we have of being able to interpret its meaning successfully.

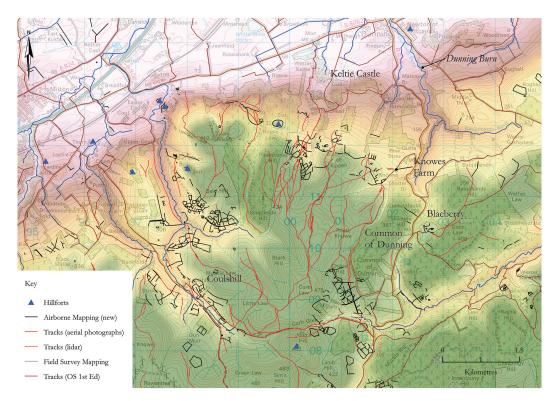
The main kinds of documents used for placename research are exactly the same as those used by the documentary historian, including royal and ecclesiastical charters, private charters – such as those of the earls of Strathearn – travellers' accounts, the Old and New Statistical Accounts, and wills and testaments. Another major source is maps, particularly older maps, such as those by Pont (1583–96), Stobie (1783) and early Ordnance Survey maps; associated with the latter are the Ordnance Survey Name Books from the third quarter of the 19th century.

From these different methods of investigation, and the different but complementary data that

were produced, we used a variety of scales to address issues of connectivity and mobility in this landscape. The main focus of our research consists of the parishes of Auchterarder, Dunning, Forteviot and Forgandenny, and our aerial analysis, documentary research and placename studies cover this area. Our studies of hillforts, place names and aerial archaeology all went beyond this to give greater context. The walkover survey examined relatively small blocks of territory spread across 40km² in the northern face of the Ochils south-west, south and south-east of Dunning (Illus 3). On the basis of informative material and a good fit with our questions, we chose particular areas for more intensive mapping and investigation, including Coulshill and Scores Farm, which are discussed below. All of this is placed in the wider context of Strathearn and the Ochils, Perthshire, Scotland and the British Empire.

THE NORTHERN OCHILS: AN ARCHAEOLOGICAL LANDSCAPE

To introduce the landscape archaeology of the Northern Ochils, we approach and move through it from the valley of Strathearn in the north, climbing southward up the hillslopes to the exposed plateau on top of the range and finishing in the sheltered bowl of the Common of Dunning (for maps see Illus 2, Illus 4). The current expanse of flat, intensively cultivated fields of the valley floor are an artefact of the massive early 19th-century drainage operations documented in the New Statistical Accounts (NSA 1845: 720-1). The string of medieval and post-medieval villages avoids the marshes by resting on the slightly raised southern edge of the valley: Auchterarder, Dunning, Forteviot and Forgandenny, along with estates such as Keltie and the now vanished Duncrub, just north-west of Dunning. The density of the cropmarks and field scatters investigated by SERF demonstrates the intensity of the human activity that has taken place in the bottomlands, in spite of later destruction through drainage, agriculture and development (eg Brophy & Noble nd; Brophy & Wright nd).



ILLUS 4 Study area with tracks, head dykes and enclosures. The clusters of tracks indicate the most important routeways, especially the route in the west and south from Auchterarder, past Coulshill, through Corb Glen to the Common of Dunning. Note the stretches of multiple, braided tracks, showing movement of livestock, eg on Casken Hill, 1km north-west of Common of Dunning (Background mapping: EDINA Digimap. Airborne Mapping: © Historic Environment Scotland) (Oscar Aldred)

On the lower and middle slopes of the Ochils (c 150-350m above sea level) there are few traces of prehistoric archaeology, one important exception being the hillforts. A few hillforts, such as Dun Knock in Dunning, take advantage of small but locally prominent hills that sit below the Ochils. Several others, such as Castle Craig and Kay Craig, are located on precipitous knolls over 100m above sea level and are tightly nestled in the lower slopes. Higher up, the earthwork remains of the hillforts such as Ogle Hill (245m), Rossie Law (319m), Castle Law (Forgandenny; 280m) and Ben Effrey (356m; the highest known hillfort) stand proud on prominences overlooking the valley bottom. A standing stone (US001), possible dun (US177) and a possible circular hut platform (US025) suggest what might have been a much busier prehistoric landscape.

These middle slopes of the northern Ochils are today characterised by large, 19th-century farms with rectilinear, stone-dyked walls, neatly associated with the small quarries that provided their building material (sites US007, 15, 19, 21, 22, 29, 101, 102, 107, 126, 128, 129, 144, 164, 182). Some of the stone-built farmhouses and yards are still used, for example Knowes Farm (US023) and Wester Gatherleys (Fyles 2004); others such as Rashie Lees (US076) are now ruined. Above the drained and improved fields of the lower slopes, between roughly 150m and 350m above sea level, the predecessor of this landscape is clearly visible in an intricate pattern of enclosures, dykes, tracks and vestigial structures. There is a clear pattern of small, turf-built structures associated with rig and furrow and with enclosures. We recorded nine of

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these, ranging from about $6m \times 4m$ to $9m \times 7m$ (US003.1–2, US014, US028, US042, US052, US054, US075, US165), and the Pitcairns survey recorded another three (Lowe & Dalland 1998: nos 3, 6, 9) (see Illus 10).

Usually associated with these structures are complex, organic clusters of small, irregular enclosures, generally no more than 15m across and often very hard to distinguish into individual pens. A good example is the cluster on Casken Hill (US005), immediately south-west of Knowes Farm (Illus 4). The small size, irregular shapes and above all their locations in these relatively poor upland soils all suggest these are tathing enclosures for short-term penning of livestock and the resultant enriching of the soil, built using locally available turf. Some sets of enclosures are rather larger and more rectilinear, often trapezoidal, such as around the Thorter Burn (US136, US140), Knock of Boghall (US141), Keltie (US173) and in Menstrie Glen (Cowley & Harrison 2001: 23). A particularly striking one on the top of Waughenwae Knowe is sub-circular, and clearly shows rig and furrow within it (Illus 5). This presumably ameliorated the problem expressed in the Scots place name 'Waughenwae', first attested in a Dunning Parish Register of 1719 and meaning 'wretched damp land' (Watson 1995: 138). These larger, more regular and defined enclosures clearly mark a stage in the long process of modernisation that lies between the small-scale, often temporary tathing and the rectilinear stone-dyked fields of the 19th century.

Some of the longer, straighter dykes lower down the slope shown on Illus 4 are clearly fragments of head dykes, marking the upper limit of the infield agriculture carried out on the farms and estates at the bottom of the slopes. Some show periods of extension and encroachment onto the upper slopes, or have tathing enclosures tacked onto them (eg 1km north-west of Knowes Farm on Illus 4).

These north-facing slopes, ranging from c 100–400m above sea level, are cut regularly by incised, V-shaped glens penetrating deep into



ILLUS 5 Enclosure on Waughenwae Knowe with rig and furrow inside and braided cattle tracks in the foreground, looking north-east to Dunning, Strathearn and the Gask Ridge (Michael Given)

the Ochils. Many of these, such as the glens of Glen Eagles, Coul Burn, the Dunning Burn and the Water of May, have clearly been significant communication routes at many different periods. They have, for example, a clear association with the hillforts perched on the spurs and noses of the ridges that lie between the glens. They also provided sufficiently good arable land for networks of 18th-century farms with small rectangular farmhouses, head dykes and elaborate systems of enclosures. The upper glen of Coul Burn is a particularly striking landscape with at least four such farms (Illus 7).

As we pass above 350m above sea level, the enclosures, structures and dykes thin out rapidly, leaving smoothly rounded hills and ridges of moorland with almost no prehistoric archaeology and only a few traces of historic-period activity. These latter consisted of quarries for the 19th-century stone dykes (eg US107, 126), braided cattle tracks (eg US103) and narrow paths that traverse up the steeper slopes and are carefully cut into them (eg US132, 135).

Within this moorland, surrounded by the rounded hills of the Ochils ridgeline, is a strikingly different landscape: the Common of Dunning. This is a very clear bowl in the landscape, where colluvial processes have created a marked increase in soil depth and fertility, as is evident in the colours of the vegetation (Illus 13). This has a long history of common grazing from the medieval period onwards, but the enclosures and turf banks show increasing arable activity, most likely in the 18th century. Chapel Hill, which may have been owned by Glasgow Cathedral until the 16th century, lies on the southern edge of the Common, and has clear views both north to Strathearn and Dunning and south into the Common. This probable boundary of the Common is marked by a very substantial turf bank.

Through all of these topographical zones run the cattle tracks. Sometimes these can be seen as funnels or 'loanings' that lead the animals between enclosures, such as at Coulshill (Illus 7) and the south side of the Common of Dunning (Illus 13). Elsewhere they appear as a series of deeply incised braided tracks on steeper sections of hillslopes. We were able to identify these on lidar-derived visualisations and vertical aerial photographs, as well as recording them during aerial and walkover survey. A striking example lies on the route from Knowes Farm to Chapel Hill, one section of which consists of 12 individual tracks, eroded up to 2m deep with V-shaped profiles (Illus 11). Their close entanglement with the arable land, enclosures and structures is an excellent demonstration of the workings of this intricate and often highly connected landscape.

CULTIVATING THE LANDSCAPE: FARMSTEADS AND AGRICULTURE

The key to understanding agriculture and land use across the northern face of the Ochils - and other similar upland-lowland interfaces - is communication. Stream incision, peat formation, alluviation, exposure and changing weather patterns have worked together over millennia to create a mosaic of challenges and opportunities to the farmer (Whittington 1973: 554-67). This mosaic has been further elaborated by people's decisions and practices over centuries, along with changes in local landownership and social structure and the ongoing impact of wider currents in ideology, politics, war and empire. All these interconnections, both on the land and in society, can only be navigated by constant mobility, exchange and communication. This can be seen in diverse but graphic ways in the place names, historical documents, archaeological features and landscape patterns seen from the air.

In the medieval and post-medieval periods, the lower slopes of the northern face of the Ochils and the deep glens running into them preserve the best evidence of upland agriculture, both in terms of surviving archaeology and documentary evidence. This evidence demonstrates significant changes in land use over time. A number of townships clustered along these glens. Blaeberry Hill is on record in a feu charter dating to 1565 (Stewart 1967: 40), suggesting a tenancy for arable use rather than upland grazing: it was the southernmost of these agricultural settlements running up into the Ochils. Records from 1574 indicate that the lands of Blaeberry Hill and Fairnyknowes were upland holdings of Pitmeadow (GD56/36), all of which lie along the route of the Dunning burn.

Pitmeadow as an agricultural settlement clearly has considerable time depth. Although it is popularly believed pit-, or more properly, pett- names ('land-holding, farm') are Pictish, almost all the second elements of these names in Scotland can be shown to be Gaelic. What we are seeing, therefore, is not a Pictish name but rather a Gaelic name that contains a word borrowed from Pictish, and an indication of the extent of Gaelic-speaking settlement and agriculture in the 10th or 11th centuries. Other place names that seem to indicate agriculture in the medieval and post-medieval periods are Mortly Burn and Craigly Burn, both seeming to contain Scots lea ('tilled ground now pasture, open grassland'); Millhaugh near Keltie ('water-meadow of the mill'); and Dalreoch (Gaelic dail riabhach 'speckled or greyish meadow').

The case study area has its origins in the Earldom of Strathearn, a vast landholding first mentioned as early as 1120 (Rogers 1992: 292). Throughout the medieval period, parts of the Earldom were given to vassals of the earl or other nearby lords. An example would be the thanage of Edindunning, which was an extensive landholding containing upland and lowland areas which covered much of the Common of Dunning, Kippen and Quilts (Rogers 1992: 303). By the 16th century, the extensive Barony or Thanage of Edindunning appears to have been broken up into many smaller units. This fragmentation can be explained by looking at the wider historical context. By the mid-14th century, the huge Earldom of Strathearn was the exception rather than the rule in terms of land ownership in Scotland, which was increasingly a scatter of small estates and landholdings (Neville 2005: 225).

By the later 17th and 18th centuries, the larger landholdings that characterised earlier periods had been broken up into smaller tenanted farms based in the more fertile lands. These had parcels of upland grazing beyond head-dykes, which separated infield from outfield to create a complex agricultural landscape: this probably represents the fullest extent of settlement in the Ochils. By the time of the first Ordnance Survey in the mid-19th century, much of this land was upland grazing, with many of the arable settlements disappearing altogether, while those lower down survived as single farmsteads. This pattern of development is repeated at Menstrie on the opposite side of the Ochils (Cowley & Harrison 2001: 16–21), and across much of upland Perthshire (RCAHMS 1990: 5; 1994: 113–23).

These patterns can also be seen in the changing patterns and distribution of rig and furrow. Examples of 'narrow curvilinear rig', such as on Casken Hill (US020), have a very flat profile and narrow, irregular intervals, ranging from 2.0m to 4.5m (Halliday 2003: 74; also at Boghall: Lowe & Dalland 1998: 4, no. 1). These reflect often short-lived episodes of cultivation, and seem to constitute the main form of cultivation earlier in the post-medieval period (Cowley & Harrison 2001: 52–3). Others are clearly 'broad, high-backed, curvilinear rig' (eg US002, US061; Halliday 2003: 70–2); in Menstrie Glen they were still in use in the mid-18th century (Cowley & Harrison 2001: 52).

A common land-use strategy along the transitional zone between upland and lowland was the construction of small enclosures for penning animals overnight, not just for safekeeping but for capturing their dung. Once the soil had been thoroughly manured, it could be used for arable cultivation. This process, known as 'tathing', effectively managed the all-important nutrient cycle on upland soils (Dodgshon 1998: 207; Dodgshon & Olsson 2006: 25); the impact of such episodic manuring can still be detected in the soil chemistry (Abrahams et al 2010). Judging from their small size, irregularity and location, this is clearly the function of clusters of enclosures such as those of Casken Hill (US005). The fine resolution of decisions about tathing and other forms of labour-intensive cultivation make them very effective strategies for exploiting opportunities offered by small 'islands' of soil that are better drained and richer in nutrients, even if they lie in a sea of boggy, acid peatland (Davies 2007: 2058).

Several of the small, turf-built enclosures mentioned above are associated with broad

rig and furrow, which is probably as late as the 17th or 18th century, but they clearly pre-date the 19th-century stone farmhouses with yards. William Roy's Military Survey of Scotland from 1747-55 indicates cultivation at a rather lower level, no higher than Keltie and Pitmeadow at about 100-150m asl, but this may just reflect the priority he gives to economically or strategically important features around lowland settlements and routes. Our structures most likely belong to the 17th and 18th centuries, when intensification of land use at lower levels led tenants to exploit the patchy arable offered by the upland mosaic of soil, drainage and vegetation (cf Dixon & Gannon 2007: 216-18).

The author of the *Old Statistical Account* for Dunning in the late 18th century is clearly hostile to these labour-intensive techniques. Even so, his careful observation still allows us to see that 'formerly' they played an important and effective role in the mosaic of upland land use: These high lands remain mostly uninclosed, except by a few dikes of earth or turf, that formerly had, in irregular forms, chiefly circular, been drawn round some small parcels of ground, once in tillage. These small inclosures, if they deserve the name, are now very properly left in pasture, except one or two adjoining to each dwelling-house, and which are cropped mostly with oats and potatoes. The produce in these high situations is extremely scanty, and the harvest very late (*OSA* 1797: 435).

The usually flat and undeveloped rig and furrow and the organic arrangement of the tathing enclosures suggest a considerable degree of temporary and episodic agriculture in the 18th and 19th centuries. Much of this was closely integrated with cattle husbandry, hence the tathing; and as we will see, the routes taken by the cattle were elaborately intertwined with the arable enclosures. Opportunities offered by the increasing commercialisation of cattle and arable production clearly made the intensive use of pockets of upland soil worthwhile in this case.



ILLUS 6 Looking from Beldhill, close to Upper Beldhill farmstead (US099), over to the traces of the 18th-century farmstead and enclosures of Hillend. Lower Beldhill farm lies by the burn at the bottom right (Michael Given)

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Ironically, perhaps, the author of the *Old Statistical Account* is criticising practices which are in part driven by the increasing commercialisation and intensity of agricultural production.

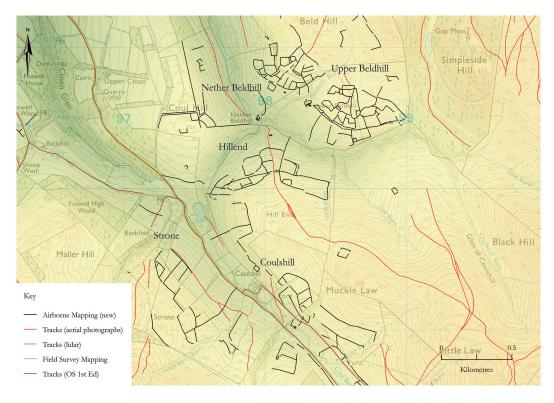
The flexibility offered by this transitional zone between valley floor and moorland played an important and highly responsive role as a land use 'reservoir'. It could buffer sudden needs for more arable land, supported by turf walls, livestock dung and intensive labour, and easily revert to cattle pastoralism of varying degrees of intensity. To achieve that flexibility, as the following case study will demonstrate, these uplands had to be highly integrated and connected with the lowlands and beyond.

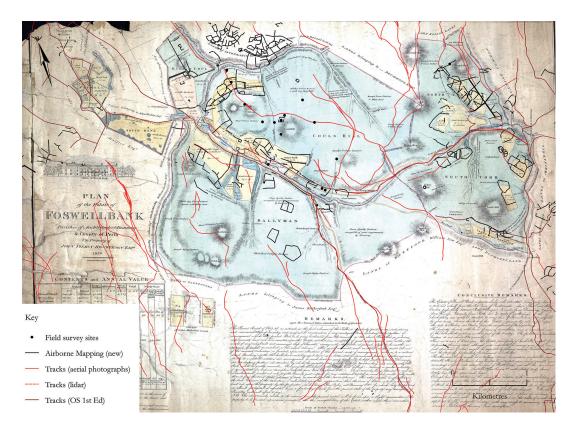
COULSHILL: AN 18TH-CENTURY LANDSCAPE

A strikingly well-preserved 18th-century landscape at Coulshill, 5km south-east of

Auchterarder, is an excellent demonstration of the integration of agriculture, intensive stock management and wider communication (Illus 6, Illus 7). Coulshill is named after a hill belonging to the settlement of Coul, the medial 's' of the name seeming to show possession. There are a small number of place names in the Ochil Hills which contain the element *hill* along with an existing settlement name. Rather than just referring to a prominent protuberance, 'hill' designates an area which is an upland pastoral zone for a lowland farm, and sometimes can be some distance from it (Barrow 1998).

Unusually, the landholdings of Coulshill remained relatively stable from the 13th to the 18th centuries, tied to the Graham family, dukes of Montrose. By the later 17th and early 18th centuries, much of the land was parcelled out into smaller tenancies and sub-tenancies. However, many of the feus of these lands





ILLUS 8 Foswellbank Estate plan, 1829, rectified to show field survey and airborne mapping data and tracks from 1st edition OS map. The slight stretch and mismatch of the map to the surveyed data is due to the different survey methods in 1829 and today, compounded by accumulated error in topographic variation (Henderson 1829, National Records of Scotland, RHP140106). (Data added by Oscar Aldred; Airborne Mapping: © Historic Environment Scotland)

retained various obligations and encumbrances dating back centuries. William Foot of Woodend of Coulshill, for example, held a feu of Coul, but was obliged to pay a duty to Strathallan as lords of the abbacy of Inchaffray and to provide horses to carry bark from Kincardine Wood (GD220/1/H/6/3/4). At the end of the 18th century, there were visible traces of former cultivation even on the hilltops round Coul Glen (*OSA* 1792: 34), but even within the head dyke intensively worked arable land was beginning to give way to grazing and occasional cultivation.

Today, the landscape is comprised of large improved and enclosed fields arranged around a central large farmstead at Coulshill. Within these large modern fields lie the remains of a much more complex system of land management, with many small earth dykes enclosing patches of rig and furrow (Illus 7). Clear clusters of enclosures can be seen on the map, each with associated farmsteads varying from one to about five rooms, some with courtyards: Nether Beldhill (US147; Canmore ID 26067), Upper Beldhill (US099; Canmore ID 26069), Hillend (US181; Canmore ID 300985), Coulshill (Canmore ID 283223) and Strone (Canmore ID 25901). The clusters of enclosures tend to lie on the upper, more gentle slopes, clustering along and above a main contouring dyke, with a few extensions below it. The farmsteads tend to be in or just above the valley bottom, particularly Hillend (north and downslope of its enclosures), Coulshill (north-east and downslope of its enclosures) and Nether Beldhill (south-west and downslope of its enclosures).

It is clear that negotiation between the movement of livestock and the cultivation of the soil is a core part of this intricate landscape. This is orchestrated not just by tracks but by boundaries. The dynamic role of such boundaries or 'marches' is particularly striking here, and can be seen very well in the Plan of the Estate of Foswellbank in Coul Glen, dating to 1829 (Illus 8; Henderson 1829). This plan shows a remarkable variety of boundaries, including 'water shear' marches (top right), watercourse marches, marches marked by lines of stones (bottom right), individual stones marking meeting points between boundaries, the summit of Corb Law marking where three boundaries converge, earthen dykes and stone-built dykes. Some of these boundaries are likely to have dated back centuries, whilst others have the appearance of being created to meet particular, perhaps short term, needs. These boundaries enabled and constrained complex networks of interactions, connections and communications across both space and time.

As the Foswellbank Estate plan shows, Coulshill was a busy landscape in the later 18th and early 19th centuries, when it was in a phase of intensified arable farming, which also involved the management of large numbers of sheep or cattle. Our rectified map shows the degree of correspondence between the enclosed and settled landscape recorded in 1829 and our archaeological data (Illus 8). Some features clearly pre-date the 1829 map. Several small enclosures in the open pasture areas in Ballyman, south of Coulshill Farm, and South Corb to the east, are not identified on the estate map; this includes a striking trapezoidal one with opposing entrances on Muckle Law, north of Coulshill Farm (US187; Illus 7). These may represent earlier tathing close to the farmsteads, rather than the intensive movement of cattle up to the Common of Dunning in the 18th century.

Several areas are marked as 'old arable' on the 1829 map, and in these areas there are several organic, oval shaped enclosures that were identified on aerial photographs. The farmstead of Nether Beldhill is marked (immediately east of 'Hill of Coul' in the top left of Illus 8), but the Hillend farmstead has apparently fallen out of use and its enclosures have become part of Coulshill. Taking all these different sources together, it is clear that tracks, boundaries and enclosures were dynamic features of the landscape, constantly changing as relations and mobilities were adapted and renegotiated.

CONNECTING THE LANDSCAPE: COMMUNICATION ROUTES

The most prominent route in the case study area is, of course, the one that runs east-west across Scotland, via Strathearn itself. The importance of this goes back at least to the Iron Age, as we will see, and is also demonstrated by two Roman temporary camps from two separate campaigns (Jones 2011: 191-2, 205-6) and a line of Roman watch-towers along the Gask Ridge on its northern side. Whilst the Strathearn route was probably the key axis of much long-distance movement in the area, the uplands contain evidence of a network of smaller routeways of many different periods. These were crucial components of dense and complex communication networks, which in different ways at different periods linked uplands and lowlands, the local area and the wider region (Illus 4).

PREHISTORIC HILLFORTS: COMMUNICATIONS AND VISIBILITY

The prehistoric hillforts show a particularly striking means of managing and controlling such communication networks. Hillforts are a rare survival of prehistoric monument building in the Ochils. Within the SERF area, as demonstrated through excavation, the earliest evidence for hillfort construction is from the Late Bronze Age at Rossie Law; however, most of the hillforts were built or modified during the Early and Middle Iron Ages. Their monumentality takes many forms; walls and banks incorporate stone, earth and timber in varying ways to enclose internal areas from 0.06ha to 2.5ha. The scale of effort needed to co-ordinate and transport materials is clearly illustrated at Castle Law, Forgandenny, where stones measuring over 1m long were sourced from various locations and transported uphill for the construction of a massive inner stone enclosure (Poller 2013a; Poller & MacIver 2014). From the broad Earn valley, the new edifice would have dramatically altered the skyline, marking this place out from the higher summits that surrounded it.

Direct evidence for agricultural and pastoral practices in the landscape of these hillforts is largely invisible (RCAHMS 1990; Cowley & Harrison 2001: 14). Trace faunal remains scattered in the ramparts from the SERF hillfort excavations attest to the presence of and dependence on cultivated cereals and livestock such as sheep, cattle and pig. Even the substantial quantities of animal bone, mainly cattle, against walls and in between the masonry, noted by Edwin Bell (1892-93: 20) during his 19thcentury excavation of Castle Law, Forgandenny, simply reflect consumption and deposition of such resources. Large-scale cultivation during the Iron Age is unlikely to have occurred within the walls of hillforts and, although there was space to accommodate livestock, grazing would have depended on fields elsewhere. Although the evidence is frustratingly sparse, there are definite but intangible routes of resource movement that connect the hillforts of the Ochils to both the immediate landscape and the valley bottom.

The conspicuous landscape setting of hillforts has inspired numerous studies into aspects of visibility, topographic prominence and accessibility as ways of exploring theories of control, competitive display, communication, power and social cohesion (Bell & Lock 2000; Hamilton & Manley 2001; Sharples 2007; Llobera et al 2011; Driver 2013; O'Driscoll 2017). Combining GIS-based viewsheds with field visits revealed a consistent pattern of visual connection between the hillforts and the lowlying Earn valley. Although alternative high points, which do not have visual connections, could have been chosen, all of the known hillforts are situated with a view towards the valley. More specifically, each hillfort overlooks and has the potential to be seen by a specific area of the valley, sometimes extensive, and sometimes more focused and restricted. Furthermore, each hillfort has other visual connections within their immediate landscape setting, which therefore offer a wide spectrum of ways in which people could have interacted and used these prominent places as they moved through the landscape. Situated prominently between the upland and lowland zones, the hillforts could act as landmarks to audiences of local communities, travellers and traders to inform their movements across the landscape (Driver 2013; O'Driscoll 2017).

As an example of this variability, the visibility of hillforts on higher elevations, such as Ogle Hill (245m), Ben Effrey (356m) and Rossie Law (319m), is notably limited by the rugged head of Craig Rossie. Craig Rossie is the highest northerly point of the Ochils (410m) and marks a key watershed and parish boundary of Auchterarder and Dunning. It controlled and impacted how these hillforts were viewed and what could be seen from them. Interestingly, even from Castle Craig (128m), the visibility to and from the east is restricted by the shoulder of Craig Rossie. But move less than 50m north-west to Kay Craig (119m) and the views toward Dunning open up (see Illus 4, Illus 9). Our excavations suggest that these two sites may have overlapped in time during their use in the first centuries AD. Although they are divided physically by the sheer cliff face of Pairney Burn, they could easily have communicated with each other. The ability to see and to be seen from different parts of the wider and immediate landscape may well have played an important role in how they interacted. (James 2011; James & Campbell 2012; Poller 2013b).

In the first centuries AD, marking a distinct architectural change in expression of visual power from the ramparts of the earlier hillfort, a massive broch tower was built on the summit of Castle Craig (James 2011; James & Campbell 2012). This edifice did not last long, however, and was probably levelled in the 2nd century AD. The finds associated with Castle Craig included a wealth of Roman goods and locally produced materials; a similar breadth of material was found on other lowland brochs such as Leckie and Fairy Knowe (Main 1998; Mackie 2016). The tower, which could have stood up to 7m above

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ILLUS 9 Aerial photograph looking south: hillforts of Ben Effrey, Castle Craig, Kay Craig and Ogle Hill; 18th-century farmstead Hillend; and Pairney Burn and Cloan (SERF)

the ground, would have certainly raised Castle Craig's visibility: given the evident importance of trade relations here, the local elite might have directed this visibility towards the contacts who supplied these materials (Macinnes 1984). The broch would have been particularly impressive as it was approached on a route passing along the foot of the Ochils (like the later medieval route and the modern railway line).

However much people working and living in or travelling along the strath were visually impressed by the hillforts, the routes up to them from the valley floor were not straightforward. Access meant picking a way up the less steep slopes of the uplands or approaching from the south. At Rossie Law, for instance, the sheer cliffs of the west and south side of the hill would not have been easy to scale, and the steep northern face was further cut off from access by the construction of the rampart. Access was from the east, through what would later be Keltie Estate (Illus 4). Alternatively, walking to Rossie Law from the uplands to the east and south-east – such as the Black Hill of Kippen or the Clevage hills – would not have been arduous for travellers on foot, detouring south to find crossing points over burns such as Thorter and Scores. Ben Effrey is the highest hillfort in the area, with extensive views to the modern village of Auchterarder, and is visible from the north and west. Approaching the site directly from the valley, you are confronted with steep scree slopes. The easier approach topographically is across a low saddle to the south-east, from the interior of the Ochils. Ben Effrey invites a potentially circuitous journey, as the only entrance across the three ramparts lies in this south-easterly direction.

Other hillforts seem to have marked key routes across the landscape more explicitly (Driver 2013; O'Driscoll 2017). The cluster of forts in and around Pairney and Cloan Burn at various elevations (Kay Craig, Castle Craig, Ben Effrey, Ogle Hill and Cloan (Canmore ID 26076)) may highlight this location as an important access point into and across the Ochils (Illus 9). From the north, people may have followed either Cloan or Pairney Burn to join Coul Burn, from there either heading eastwards to Corb Glen or up towards Glendevon. At this point, presiding above the Yetts o' Muckhart, with Glendevon to the east and a route to the Common of Dunning to the west, is the hillfort of Down Hill (Canmore ID 26533), one of the very few hillforts on the south side of the Ochils (see Illus 2 for a location map). Gleneagles would have also been an important route across the Ochils, and therefore it is not surprising to find another hillfort, Loaninghead (Canmore ID 25903), at the head of the glen.

Evidence from the excavations suggest that after the Middle to Late Iron Ages there was a shift away from building new monumental sites in these uplands. The subsequent histories of the established hillforts vary. A scatter of Pictish remains in the form of hearth or midden dumps in the upper fills of ditches suggests, perhaps, a more transient or ephemeral relationship to some of these places. After that, the evidence from the hillforts is one of general decay and physical abandonment, punctuated by points of activity. A 10th-century settlement, for example, was constructed above the debris of the destroyed broch at Castle Craig; at Kay Craig a ditch was deliberately infilled and levelled during the 13th century; 18th- and 19th-century cultivation banks and quarries infringe on Dun Knock; and a Victorian summerhouse on Ogle Hill was erected as part of an estate promenade.

These activities, even if many are destructive, demonstrate that the hillforts in the uplands had the ability to stay within the consciousness of local communities. These places have persisted by their sheer monumentality. Lower down in the valley, however, even these monumental sites were vulnerable to obliteration during the intensification of agriculture, exemplified by the cropmark remains of Dun Knock and Thorn.

MOBILITY OF PEOPLE AND CATTLE IN THE POST-MEDIEVAL OCHILS

One of the most striking demonstrations of the importance and complexity of mobility in the

Ochils, and its negotiating force in shaping place and time, comes from the management of cattle in the post-medieval period. Before examining two particular routes in detail, we use place names and historical evidence to demonstrate the primary role that movement played in experiencing, marking and organising this intricate landscape.

A small number of place names show the importance of identifying routes through the hills and important nodes on those routes. Marcassie, found in Marcassie Bridge and Marcassie Burn, is in Gaelic marc fhasaidh 'horse stance', probably a resting area for horses on their way to and from Dunning via Clatteringford Burn, Blaeberry and Pitmeadow. At the western end of the study area is Foswell, possibly Gaelic fos coille or 'wood stance', an area for resting horses on the route from Auchterarder to Common of Dunning, where it meets the road to Dunning via Blaeberry, and on into Kinross-shire and Fife. The juxtaposition between Foswell and Cloan, Gaelic cluan 'meadow', is surely no coincidence. Along this road from Cloan to Common of Dunning is Craig Meed, where meed possibly means a marker point along the route on what is a relatively featureless landscape.

Cadgergate Head was a routeway for cadgers (itinerant metal smiths), on their way from Glen Devon to Strathearn, while Gateside, containing Scots gate ('road, street'), was a settlement beside the road leading from Dunning to the south via the Common of Dunning. Haldane's research also suggested a number of other materials which frequently crossed the Ochils. Lime for the farmland of Strathearn crossed from west Fife, as did coals and building slate, while grain, flax and wool made the return journey (Haldane 1952: 1). Two accounts at the end of the 18th century suggest coals being transported across much of the region by a network of roads (OSA 1792: 44; Robertson 1794: 49). The construction of the Glen Devon turnpike road in the early 19th century significantly reduced the cost of coal in the whole region (NSA 1837: 296), and may have resulted in these secondary routes going partially or wholly out of use.

One of the most common patterns of movement in the post-medieval period was

associated with the movement of cattle at a variety of scales. Regular summer movement to upland shielings is known across Scotland and the rest of Europe during the post-medieval period, though it took different forms in different areas. It started to die out in the 17th century, particularly in the Lowlands, though it continued until the early 20th century in Lewis (Whittington 1973: 567– 9; Fenton 1999: 130–42; Costello 2018; Dixon 2018; Kupiec & Milek 2018). The nature of the practice in lowland Perthshire, even in the 18th century, is not well understood (Cowley & Harrison 2001: 30–1) and earlier medieval practice is even less well known (Dixon 2002: 41; 2018: 71).

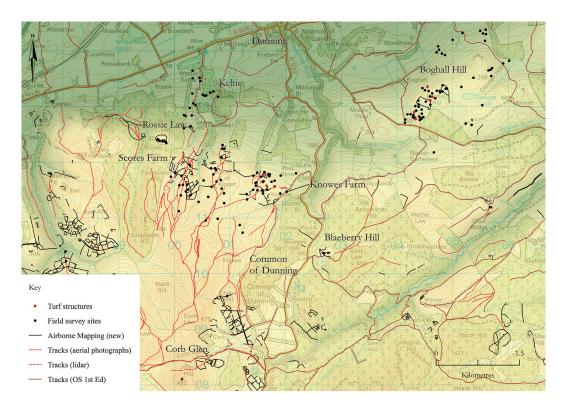
Seasonal movements over relatively short distances between a lowland settlement and nearby upland pastures seem to have died out in the Ochil Hills by the 16th or 17th century (Cowley & Harrison 2001: 30). Witnesses in the 1690s to a case of graziers in Glen Devon who hamstrung animals straying into their grazing area had distant memories of shieling transhumance, but it no longer existed in their day (Dixon 2018: 60). While the Menstrie Glen survey identified 16 shieling groups (Cowley & Harrison 2001: 30-1), our own survey found none at all, in spite of systematic walking across a wide range of appropriate upland landscapes; Bil's study of shielings in Perthshire reports none from the Ochils (1990: 32).

There are no place names indicating transhumance in our area and only about three or four such place names in the whole of the Ochils. Their small numbers and apparently early dates support the historical and archaeological evidence that transhumance was not a postmedieval phenomenon. Auchenharry Burn in Alva Glen, for example, immediately east of Menstrie Glen, is in Gaelic achadh na h-àirigh 'field of the sheiling', with Scots burn added later. Scots was beginning to make its mark as a naming language in the early 13th century, and there are Scots place names on record in the area stretching from Elcho Castle to Inchaffray Abbey from the 1220s. Gaelic had certainly died out in our immediate area by the time the divisions of Balquhandy had been named Ovir et Nethir in 1488 (Paul et al 1882-1904: ii, no. 1703). The Auchenharry shielings were clearly in use well before then.

We know from documentary sources that one particular route, from Dunning to the Common of Dunning, was in use from at least the mid-16th century, following a string of small agricultural settlements along the Dunning Burn and its upper tributary the Clatteringford Burn (Stewart 1967: 40). Given the damage that animals' hooves can do, not to mention the eating of crops, it is easy to see that any large-scale frequent movement of animals back and forth to the Common would, if possible, be directed away from the agricultural areas around these settlements. By the 16th century, therefore, there would be a need for an alternative route from Dunning to its Common which by-passed as much as possible the agricultural lands on either side of the burn. During fieldwork in 2009, we discovered evidence of a route between Knowes Farm to Corb and the Common of Dunning, which may have met this need (Illus 4; Illus 10). It is unlikely to be later: a road which follows the line of the modern road and is depicted on a map of 1818 (Drysdale 1818) was probably built sometime in the later 18th century; it is not depicted in Roy's map of the 1750s. This would have made an upland route unnecessary, particularly as by the time of Roy settlements such as Blaeberry along the Clatteringford Burn already appear to have been abandoned.

There are many forms of mobile pastoralism, however, and the Common of Dunning may have been part of an estate-organised summer pasturing system as early as the late 14th century, when the Earls of Strathearn granted 'the meadow of Dunning' to the Rollos of Duncrub (NLS Adv MS 15.1.23). In many areas, periodic cattle grazing replaced this medieval use of the uplands as sheep-walks, as commercial demand for beef on a large scale grew in the 17th and 18th centuries, particularly, as we will see, because of the Royal Navy's increasing requirements (Fenton 1999: 133).

Use of land for pasture tends to leave very little archaeological evidence, save for structures related to animal management. However, taking a landscape approach to the study area has revealed several practices, routes and connections



ILLUS 10 Map of Keltie, Knowes Farm, Common of Dunning and Boghall, showing areas walked, turf structures, routes and places mentioned in the text. Airborne Mapping: © Historic Environment Scotland (Oscar Aldred)

related to the movement of animals. One of the most prominent upland routes across the Ochils was the one between Auchterarder via Coulshill and Corb Glen to the Common of Dunning, and from there southwards to Yetts o' Muckhart (Illus 2). This is the same as the route marked out by the cluster of Iron Age hillforts at its northern end discussed above (Illus 4). Historian A R B Haldane made local enquiries about the road, though unfortunately they are not detailed in his extensive archive in the National Library of Scotland (Ass 6071). What little information there is in his archive suggests that the road does not form part of the extensive network of roads used annually in long distance droving, as the main routes bypass the Ochils (Haldane 1952: map). He suggested it was overshadowed by the parallel routes to Yetts o' Muckhart from Gleneagles and Dunning, major roads which were well maintained and improved in the later 18th and early 19th century (Drysdale 1818).

The most striking archaeological evidence for this regular movement of cattle consists of the deeply incised braided tracks on steeper sections of hillslopes, with marked V-shaped profiles up to 2m deep (Illus 11). The form of these 'braided' trackways is known in several places across Scotland, though they are not by any means universally distributed (see below). However, given their localised character, is there something unique in these settings regarding their formation processes? As we observed at a much smaller scale with a free-ranging herd on Beldhill (Illus 6), cattle follow each other up the slope in the steeper sections. In doing so, there is considerable erosion from their hooves: as they scrabble up from muddy track to as yet uneroded grass, they create nick-points which gradually work their way up the slope, resulting in these

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ILLUS 11 Braided cattle tracks on Eldritch Hill looking south, 2019 (Pablo Llopis)



ILLUS 12 Scores Farm (US133; Canmore ID 320528) from the east in 2016, with braided cattle tracks (marked by arrows) and enclosures (Michael Given)

impressive monuments of very specific routine practices. As we explain below, the historical and archaeological evidence appears to back up this interpretation. It is very likely that the combination of local geology, soils and slope angles are also contributing to the 'scoring', as well as the frequency, intensity and duration of their use.

The landscape around the 18th-century farmstead at Scores is a striking example of the close relationship between arable practices and stock movement on the northern slopes of the Ochils (US133; Canmore ID 320528) (Illus 1). Round the remains of five buildings, a corndrying kiln, an enclosure and a later sheepfold is a dynamic landscape, where seasonal changes of land use lay alongside long and short-term practices aimed at maximising the output of the land (Illus 12). The close relationship between arable and pastoral practices is very clear here, with braided trackways for the frequent movement of cattle between Strathearn and the summer grazing on the Common of Dunning.

Both above and below Scores Farm are clear stretches of braided cattle tracks. They only appear on the steeper slopes, typically fanning out from the break of slope into anything between three and eight separate furrows, normally c 0.5m deep and c 2.0m wide. The spatial relationships between the tracks and the tathing enclosures make it very clear that the animals were directed round the outside of the enclosures. One set of tracks, for example, (US139) clearly directs the cattle into a gap between two sets of enclosures (US138, US140). As the enclosures lie on flatter ground, the cattle tracks disappear, though the route between the enclosures is very clear. At a break of slope at the northern end of the enclosures the braided tracks appear again, running down the deep slope, and then disappear on the next broad terrace directing the cattle to the west of Scores Farm. This form of cattle management may also explain how the occasional breaks in the head dykes, deeply scarred from the movement of cattle, were used.

Other examples of braided tracks identified on lidar are located on the steeper slopes on the western side of the study area (predominately north-facing), such as on Wether Hill (Canmore ID 353874) and Craigentaggert Hill (Canmore ID 352065, 353875). For other examples of braided tracks seen on vertical aerial photographs, the area south of Maller Burn, on Maller Hill and Carlownie Hill (Canmore ID 353878) has extensive tracks again on the northern slopes, as do the area south and west of Black Hill of Kippen, close to Little Law (Canmore ID 353880), and the area just west of Scores Farm (US134; adjacent to Canmore ID 26700) (Illus 7). From aerial survey, the best example was seen on the northern slopes of Eldritch Hill, first identified during walkover survey (Illus 11) but also photographed from the air (Canmore ID 350095 on the oblique aerial view catalogue number DP 233272).

The distribution of braided trackways across the rest of Scotland, visible as either earthworks or cropmarks, suggests that they largely occur in the eastern part of Scotland close to the Cairngorms and the Scottish Borders, close to or on the lowland/upland interface (Canmore ID SC 1596413). This may, however, reflect biases in their preservation and survival, as well as in the survey record. There are examples in the Scottish Borders, such as at Camp Moor (Canmore ID 84471), and at Sannox on Arran (Canmore ID 357880), as well as others closer to the Ochils on the Hill of Drimmie (Canmore ID 28763) and at Garrow (Canmore ID 113503), both in Tayside. With the increasing use of technologies such as lidar, we will be able to address more fully questions of formation processes, grazing practices and the relationship between the land and the movement of animals and people.

One clear target for graziers in the Ochils from the medieval period to the 18th century was the Common of Dunning. Even the increasing numbers of enclosures across the Common in the 18th century are carefully arranged around the regular, large scale movement of cattle, with clear funnels or 'loanings' leading the cattle between the enclosures (Illus 13). On the south side, where the Common seems to be bounded with a very substantial turf bank, there are several stretches of braided cattle tracks leading up the slope towards a pronounced cleft immediately east of it.



ILLUS 13 'Funnel' for cattle movement between two arable enclosures on the west side of Chapel Hill, on the northern edge of the Common of Dunning, taken from Corb Law in June 2016 looking north-east, with Strathearn visible on the top left (Michael Given)

The shieling system ended at very different times in different parts of the country, responding to changes in the economy and patterns of landholding. In central and south-eastern Scotland, sheiling practice was no longer common by about the 17th century. Following this, there were two main forms of upland grazing practice in areas in the east of Scotland, particularly those bordering the lowlands. The first was local use of grazings above the head dyke. This was particularly important for farmers of marginal ground, for whom their cattle were an important source of dairy for subsistence and payments in-kind, and could be readily sold if needed: by grazing them in the uplands they could make up the short-fall from poorer crop yields in the less productive uplands (Fenton 1999: 135). The second type of movement of cattle to the grazings is that driven by the estates. Local lairds employed herdsmen to prepare the upland pastures in advance and to gather cattle and drive them there en masse. In some places, cattle were driven on to the hill pasture along prescribed routes daily during the relevant seasons, returning at night or being penned in tathing enclosures.

This general pattern of use is supported by documentary evidence in the comparable landscape of Menstrie Glen. There, the landowner specified the route to be taken to the grazings and employed a herdsman to ensure careful management of the stock in the mid-18th century (Cowley & Harrison 2001: 23). It is important to note that although the management was carried out by estates, the basic unit of production still consisted of individual farmsteads and families, and they retained ownership of the individual cattle (Fenton 1999: 137). More centralised management of the upland grazings allowed the lairds to control the use of the land and maximise the output of cattle, which would in turn allow their tenants to pay higher rents. This raises the complex and important issue of who was driving changes such as this in the rural landscape (see Boyle 2003; Campbell 2009; Geddes & Grant 2015): was it landlords, well-to-do tenants, particular families or individuals, or intricate combinations of these different agencies?

The more intensive, centrally controlled model is a good explanation for the braided trackways of the uplands in the Ochils. Being regularly used by herdsmen moving large herds of animals back and forth, perhaps even on a daily basis at times, the ground was continually eroded and did not have time to dry out, forcing the animals to weave around the damaged ground, creating multiple trackways. The braided trackways then, rather than being evidence of generations of annual transhumance, should be considered as evidence of a complex and intensive system of cattle management which occurred over a relatively short period in the 18th century.

THE OCHILS AND THE WORLD

As well as all these relatively local networks of connections, the Ochils were also connected socially, culturally and economically to a much wider landscape - and seascape. These connections are more challenging to understand, but our interdisciplinary approach allows us to push out the scale of analysis. A crucial connection was in the form of obligations and rights, some of which survived from medieval times into the 18th century. In the medieval and early post-medieval period, significant amounts of land in the area were granted to the church. The abbey of Inchaffray, for example, is closely associated with the area, being granted the church of St Kessog in Auchterarder in 1200. Maria, daughter of the Earl of Strathearn, granted a pension to Inchaffray from the lands of Pairney in the later 13th century (Rogers 1992: 306). In the 16th century such church obligations survived, although most of the church lands had been given out in tacks (Dilworth 1986).

Through such obligations to monasteries and abbeys, the people of the uplands were connected to monastic orders which operated internationally, and to ways of life and understandings of the world shared across Europe and beyond. Such relationships were expressed on the ground: they involved people moving across the landscape, carrying materials, letters, and perhaps meeting regularly to discuss or negotiate these obligations – such acts were in and of the landscape, not abstracted historical constructs.

Economic changes occurring in the wider world also found expression in the uplands. The grazing of sheep probably dominated upland Perthshire in the medieval period (Fenton 1999: 133), as was probably the case in Menstrie Glen. The presence of a possible weaving-shed in the later medieval settlement of Blaeberry Hill certainly supports this (Canmore ID 26689; US027), and the village of Dunning itself has a long history of weaving (OSA 1797: 440; NSA 1845: 722), as is evidenced by the surviving weaving sheds in the village (Canmore ID 316884). It is interesting that much of the supporting work for weaving could be done in the uplands while tending stock, such as spinning, the bleaching of previously woven cloth and collecting roots, herbs and lichens for making dye (Fenton 1999: 137).

The increasing price of cattle from the 16th to 18th century in Scotland resulted in a large cattle-rearing and droving economy. The reasons for this are complex (Haldane 1952; Adamson 2014: 30-8), but include the need to feed the growing cities of the south. London, for example, was consuming over 75,000 cows a year by the end of the 17th century (OSA 1797; Koufopoulos 2004: 111-12). This was supplemented by the enormous demand from the Navy, which drove production of both salt beef and fresh beef from places as distant as the Hebrides (Haldane 1952: 174-7; Moreland & MacLean 2012: 6). The increasing organisation of the Victualling Board from the early 18th century and its policy of targeting small and large producers alike from across the country played a major role in the development of commercial cattle-raising operations at all scales, regardless of distance from London or closeness to harbours or major roads (Rodger 2004: 304-7).

These national and international changes stimulated changes in upland landscapes, such as the complex and extensive tathing pens to be found at both Coulshill and Scores Burn. It is interesting to consider how the increased demand for cattle may have influenced the availability of fleeces for this weaving industry – it may well be that as the uplands became more valuable as a place to rear cattle, the economics of the weaving trade were affected. The 19th- and 20th-century change from mixed-use of the uplands to open hill pasture for cattle is also part of a wider change in land use in Scotland that included the Highland Clearances (Cameron 2001). As we have seen, the uplands were intimately connected to much wider economic networks, responding to change in distinctive ways. They were not just receivers of change, but drivers of it through their complex web of connections to the wider world.

CONCLUSIONS

All the long connections across time and space that we have explored in the northern Ochils have challenged us to examine a range of difficult issues closely: connectivity; persistence; transhumance; the uniqueness of locality and the problems of fragmented data. Bringing a range of disciplinary perspectives to these issues has been key to the insights that this highly connected and complex landscape has given us.

Paths and tracks have a much closer relationship to the landscape and to human society than just facilitating movement. In the case of trackways that develop organically through use, such as the braided cattle tracks, it is clearly the initial movements that facilitate the path; moving beasts and animals continue to develop the path and so attract future movements. Hillforts, farmsteads, farmhouses and estate buildings are placed at influential nodes within those patterns of movement, such as hilltops, spurs, passes and crossroads. They then contribute to the attraction and funnelling of continuing movements of tenants, graziers, livestock and merchants. Hillfort construction altered movement and access within local contexts but, more regionally, their conspicuous setting along the fringes of the Ochils - coupled with the persistence of their monumental architecture - enabled them to be visual guides as people moved both along the strath and across key routes over the Ochils.

Together, all these routes, tracks and nodes form highly complex and interlocking social units: relationships are created and developed by physical movements that stretch from the next field to the Indian Ocean. It is not just cattle that are tathed overnight in irregular turf-dyked enclosures, for example, but the actions, focuses and perceptions of their tenders. Boundaries can direct movement just as much as preventing it, by pushing cattle or tenants along the march dyke, or funnelling them through dedicated gateways. As with the 17th-century graziers in Glen Devon (Dixon 2018: 60), the visible, tangible boundaries create contestation and even violence by the simple act of being crossed.

It is impossible to separate connections across place from connections across time. This is emphatically not the essentialist, grossly oversimplified notion of 'continuity', which conjures up the spectre of 'tradition' that fossilises human sociality and landscape alike. Persistence implies an intent or attentiveness, for example, to the traces of past connections that are incorporated into contemporary life, just as a 1663 marriage stone was incorporated into an 18th-century farmstead (Turner & Williams 2015-16: 93). Old ramparts, enclosures, tracks, trees, ecologies and social memories are all contributors to the infinitely complex networks of relationships that constitute the social landscape of any one moment.

Transhumance provides an excellent example of a system of interaction between humans, animals, vegetation, topography, the seasons and the past. There are many forms of such systems, and the variations in time and space in the Ochils are particularly interesting. Unlike Menstrie Glen just 20km away on the southern slopes of the Ochils, there is little evidence for shieling transhumance in our area, though place names suggest it took place in the medieval period. Instead, there has been a clear focus on the Common of Dunning since at least the late 14th century. More research is still needed, but there does seem to be a wide range of highly localised patterns of rights and obligations to land and land-use in the uplands. It may be, for example, that the continuing power of these local land rights prevented the development of community shieling areas, in contrast to Menstrie Glen.

Our project has found important new evidence for cattle movement by identifying braided cattle routes, but these are clearly associated with 18thcentury intensification of cattle production for the booming commercial market. Even if they have made a very significant change to the landscape, they were created by a comparatively short-lived relationship between landowners, cattle and the market for the beef that fed the UK and its Navy during a period of colonial and imperial expansion.

The striking variation in patterns of seasonal movement between the north and south faces of the Ochils is just one example of the uniqueness of locality demonstrated by this project. Such local particularities are essential for understanding landscapes - at a regional scale as much as that of a single case study (Campbell et al 2002: 113; Davies 2007). This especially applies to historical archaeology, where simplistic historical metanarratives often fail to recognise the dynamism and complexity in post-medieval rural landscapes (Campbell 2009; Geddes & Grant 2015). This study therefore joins the growing body of work that advocates a more nuanced understanding of the changes which occurred in rural landscapes across much of Scotland in the post-medieval period (Cameron 2001; Dalglish 2003; Campbell 2009; Adamson 2014; Geddes & Grant 2015; Bezant & Grant 2016). These seek to challenge the simple dichotomies of pre- and post-Improvement to understand change as a process that is varied and local, but also an integral part of wider changes in societies and landscapes across the post-medieval world.

The topographical diversity of the uplands generates a mosaic of soils, habitats, constraints and opportunities, which interact elaborately with social pressures and individual decisions. The field survey evidence and aerial archaeology have shown the clear differences in organisation of boundaries, farmsteads and tracks between two adjacent routeways: the tolled one from Dunning via Blaeberry to the Common of Dunning, and the toll-free route from Auchterarder via Coulshill and Corb to the Common of Dunning. Hillforts, apparently in very similar landscape settings, actually have very precisely targeted fields of visibility, and therefore distinct fields of communication. Even individual cattle being driven up a hill choose to walk in separate lines, thus forming the distinctive braided cattle tracks.

One of our biggest challenges has been fragmentary and often incomplete data, partly but not only because of the specific aims and context of our project. The intensification of land use in the 17th and 18th centuries has obliterated most of the evidence for earlier settlement and land use, including what must have been a significant Iron Age settled and cultivated landscape. On the other hand, abandonment of what Improvers saw as 'marginal' arable land led to the excellent preservation of a busy 18th-century landscape (as in Menstrie Glen; Cowley & Harrison 2001: 14). We have found it enormously stimulating and productive to push questions and problems backwards and forwards between ground and aerial survey, Iron Age hillforts and postmedieval tracks, place names and topography, documents and structures. We strongly believe that connectivity between disciplines is essential for understanding connectivity between times and places.

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Kinneddar: a major ecclesiastical centre of the Picts

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ABSTRACT

The early Christian sculpture from Kinneddar has long been noted as a major assemblage. New survey work by the University of Aberdeen and AOC Archaeology has identified a large vallum enclosure around the site that was renewed on at least one occasion. The vallum enclosures surrounded an area of up to 8.6ha, and the groundplan presents striking resemblances to other major ecclesiastical sites, particularly Iona. Evaluative excavations instigated through research- and development-led projects have provided an outline chronology for the vallum enclosures, identified an additional annexe and located settlement features inside the enclosures. Radiocarbon dating suggests activity as early as the late 6th century, with the vallum likely to date to the 7th or 8th century. This article sets out the evidence from the site and discusses Kinneddar in relation to other likely major ecclesiastical sites in northern Pictland and its wider early medieval Insular context.

INTRODUCTION

Kinneddar, Lossiemouth, Moray (Illus 1), is likely to have been one of the major ecclesiastical sites of northern Pictland. It is a site long discussed with regard to its sculptural evidence and has been investigated archaeologically from the 1970s onwards, but its true nature and significance has only recently begun to materialise with new geophysical evidence and now the first radiocarbon and well-contextualised archaeological sequence. This has been established through research- and development-led excavation, with radiocarbondating evidence showing that the site was in use from the late 6th century through to the 12th century when Kinneddar first appears in the historical records. This article outlines the recent archaeological survey and excavation results and attempts to draw out the significance of the site in its wider context.

Kinneddar stood at the edge of the former sea loch of Spynie, on a raised ridge of land. Loch Spynie was a sea loch in the later medieval period, but through sandblow became a freshwater loch by the 17th century and was almost totally drained by the 19th century (Stratigos forthcoming). The sea loch would have provided a sheltered anchorage for shallow draft vessels and access to the Moray Firth seaways. At the other end of the sea loch, 11km to the west, lay Burghead, the largest identified early medieval enclosed

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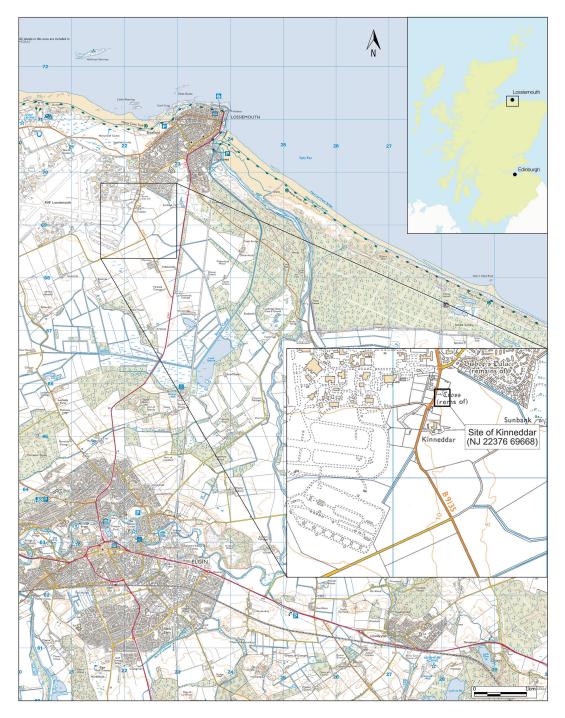
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ILLUS 1 Location of Kinneddar, Lossiemouth, Moray (Base map © Crown Copyright/database right 2018. An Ordnance Survey/EDINA supplied service)

site in northern Britain (Oram 2007: 241). 35km to the northwest, across the Moray Firth, lay Portmahomack, a monastery established in the 8th century and destroyed during the Viking Age (Carver 2016; Carver et al 2016).

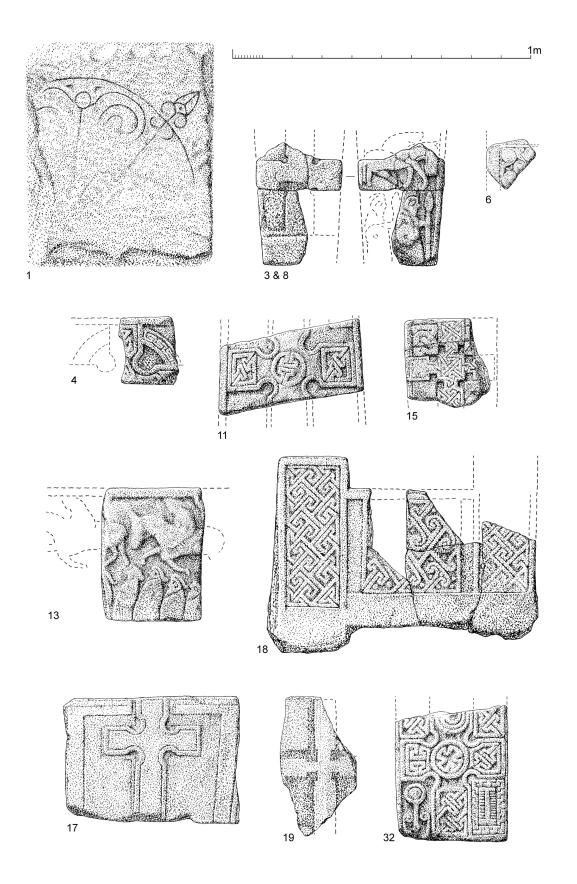
Today Kinneddar comprises a graveyard marked by a relatively modern sub-rectangular boundary wall, with gravestones from the 17th to the 20th century (Illus 2) (Canmore ID 16470). Kinneddar's parish church went out of use around 1666, when a kirk at Drainie was constructed for a new parish uniting the medieval parishes of Kinneddar and Ogston (Shaw & Gordon 1882, vol III: 400–1). Richard Pococke (1887: 186) noted that when he visited in 1760 there was 'a Church in form of a Cross the foundations of which are seen' at Kinneddar, but by 1792 only 'vestiges' of the church remained (*OSA* iv 1792: 81). However, Dr Richard Rose, when writing about Kinneddar in 1842 (*NSA* xiii 1845:

Elginshire 151), mentioned that foundations of a church in the centre of the graveyard could still be identified.

In the medieval period Kinneddar was important as a centre of the bishopric of Moray. In the years immediately following the granting of a papal mandate on 7 April 1206, the bishop's seat was fixed at Spynie (moving later to Elgin in 1224), but before the episcopacy of Bishop Brice (1203–22) Kinneddar had been, along with Spynie and Birnie, one of the three episcopal seats of the bishopric (Innes 1837 [Moray Reg nos 45, 46]: 39–43; Fawcett 1999: 5; Oram 2016: 18). It remained a significant place after the 12th century (Dransart 2016: 60-1, 73-4) with charter evidence demonstrating that Kinneddar was a location for the bishopric's charter ceremonies of 1226, 1237, 1263, 1269, 1294 and 1328 (Innes 1837 [Moray Reg nos 75, 89, 126, 130, 137, 278]: 82, 103, 140, 144, 151, 278). Kinneddar also had a castrum,



ILLUS 2 Geophysical survey at Kinneddar by the University of Aberdeen and AOC Archaeology (Base map © Crown Copyright/database right 2018. An Ordnance Survey/EDINA supplied service)

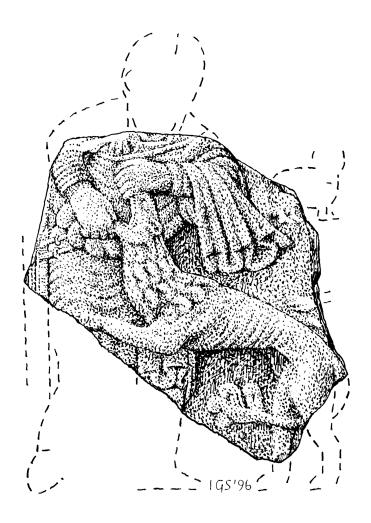


ILLUS 3 (a: previous page)
(b: right)
(a) Examples of monuments from the early medieval sculpture assemblage from Kinneddar
(b) the David shrine fragment (not to scale) (© Historic Environment Scotland)

from where the bishop travelled in 1383 (Innes 1837 [Moray Reg no. 289]: 369), which presumably was the location of the 'capella manerii sui de Kynedor', the 'chapel of the bishop's manor of Kinneddar', mentioned in 1328 (ibid [Moray Reg no. 137]: 151; Dransart 2016: 73). This residence subsequently fell out of use and into ruin, and was described as the 'palatium dirutum', 'ruined' or 'destroyed palace', in Moray Registrum no. 462 (Innes 1837: 426), dating to some point between 1606 and 1623.

In the 18th century there are some general descriptions of the episcopal residence, stating that it was in 1760 'a large house' whose foundations could be seen (Pococke 1887: 186),

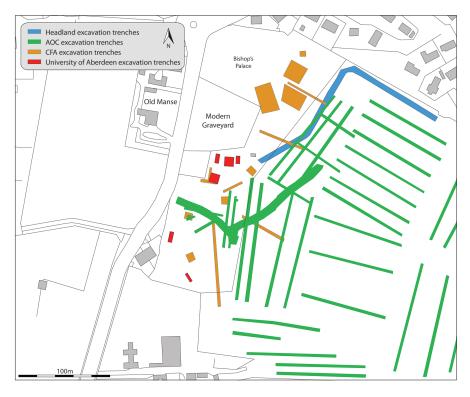
and in the *Old Statistical Account* it is stated that there were 'the remains of an old palace or castle' close to the church of Kinneddar (*OSA* iv 1792: 81; see also Grant & Leslie 1798: 84). The form of the bishop's residence is uncertain, but, according to the entry by Rose in the *New Statistical Account* (*NSA* xiii 1845: Elginshire 151–2), it included two sets of walls, each with a ditch outside and an earthen rampart inside, the outer wall had towers at each angle of a hexagonal groundplan, and at the centre was a great tower, storehouses and a barracks. According to Rose (ibid: 151) 'what remained of the doors and windows, and the hewn stones found among the rubbish, shows that the work



was of the Gothic order, and highly ornamented in its day'. Rose stated (ibid: 152) that some of the eastern wall and towers still survived, and that a drawbridge had recently been found there, but that elsewhere the walls and ramparts had been levelled to the ground, with the ramparts used to fill in the ditches, before the land was placed under cultivation. While this was taking place (considerably before 1842), Rose visited the site, describing (ibid: 152–3) stone cists, human bones, peat or turf ashes, oak charcoal, and broken urns found under the ramparts, with 'the numerous graves running parallel to the wall, and covered by the high earthen rampart'. According to Rose, the castle was so closely 'adjoining to the churchyard' that the large central tower was supposedly used as a belfry for the church after the stronghold fell out of use (ibid: 151–2). While Rose's account may have been an embellished interpretation, if even some of the finds and structures he described were present then it indicates that substantial structures were created at Kinneddar in addition to the parish church, and that these covered earlier human activity on the site, including what may have been a cemetery (although of uncertain date).

The early medieval sculptural evidence (Illus 3) from the site included part of a now lost Class I symbol stone, along with over 30 fragments of composite box-shrines, cross slabs, freestanding cross fragments and other sculptural elements. The Class I stone was found in 1855 when the church manse at Kinneddar was demolished. It was decorated with a large crescent and V-rod with spiral decoration on the crescent (Stuart

1856: 40). The early Christian sculpture at Kinneddar is diverse, with fragments of cross slabs decorated with ring-headed crosses, knotwork and key pattern, and some of the stone fragments show human figures, including figures on horseback and warriors carrying spears. The style and quality of carving has close parallels with collections from Burghead, Rosemarkie, St Andrews and Portmahomack, with the majority of the carvings likely to be of 8th- to 9th-century date (Dransart 2001: 235, 239; Henderson & Henderson 2004: 130-1; cf Henderson 1998: 130-1, 155, 165). Most of the stones were found in old stone dykes around the Old Manse or were dug up in the cemetery (Stuart 1856: 40; Allen & Anderson 1903: 142). One sculptural fragment is worthy of particular mention - a fragment of a panel showing David wrenching apart the jaws of a lion (Illus 3b). This can be directly compared with the St Andrews Sarcophagus (Henderson 1998), and it is likely that the Kinneddar



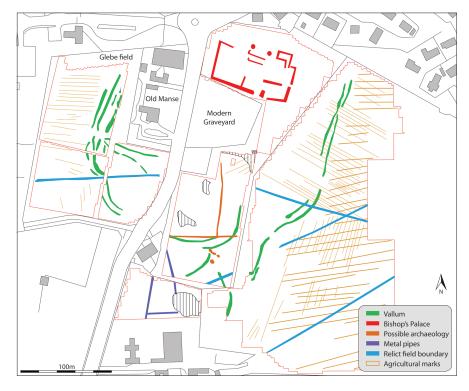
ILLUS 4 Development-led trenching at the site (Base map © Crown Copyright/database right 2018. An Ordnance Survey/EDINA supplied service)

monument was designed to hold the body or relics of an important saint or more likely a king (Henderson 1998: 154–6; Dransart 2001: 235; Jane Geddes pers comm).

Previous archaeological work at the site has included excavation by boys from Gordonstoun School in 1936, who, led by a schoolmaster, excavated the foundations of the Bishop's Palace (Canmore ID 16459). In 1995, The Moray Society commissioned CFA Archaeology to undertake some trial trenching at the site (Cameron 1995). A number of evaluation trenches were dug to the north, east and south of the modern graveyard (Illus 4). These uncovered walls that were probably associated with the Bishop's Palace to the north, but identified few definitive features to the east or south. A later geophysical survey by the Scottish Episcopal Palace project identified the cruciform layout of the later church within the modern graveyard (Dransart 2016: 73). In 2002, development-led work by Headland Archaeology revealed a large ditch to the east of the Bishop's Palace, which was not dated or fully published (Brown 2002), but at the time it was tentatively identified as a possible enclosure ditch surrounding the Bishop's Palace or the modern graveyard. The description and position of the ditch suggests it is likely to have been a northern stretch of the vallum. The ditch found consisted of a primary cut around 2.8m wide, which was recut by a larger ditch, 5.6m wide – it is possible that this was an early vallum ditch with a recut by a secondary vallum on the same line (see below). Medieval redware was found in the deliberate backfill of the recut ditch.

UNIVERSITY OF ABERDEEN AND DEVELOPMENT-LED EVALUATIONS

New work was carried out at the site from 2015 to 2017 as part of research by the University



ILLUS 5 Interpretation of the geophysical results (Base map © Crown Copyright/database right 2018. An Ordnance Survey/EDINA supplied service)

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of Aberdeen. Development-led archaeology led by AOC Archaeology occurred during the same period (Dunbar 2018). The University of Aberdeen-led work was undertaken as part of the Northern Picts and Comparative Kingship projects, both of which seek to understand the environs of the major Pictish centre at Burghead. In 2015 and 2016, geophysical surveys were undertaken to test the idea that a vallum ditch might surround the modern cemetery - as had been established by aerial photography at Portmahomack (Carver et al 2016: 37). The geophysical survey was carried out by team members of the Northern Picts project (Noble & Sveinbjarnarson 2016: 125) with the aim of trying to identify signs of an outer enclosure around the modern graveyard. Approximately 5.47ha was surveyed with a dual sensor Bartington Grad 601-2 gradiometer. Data was collected in zigzag mode with 1m traverse and 0.25m sample intervals.

This survey identified traces of probable vallum enclosures to the west and south of the modern graveyard (Illus 2 and 5). These are typically apparent as linear bands of positive magnetic readings. In the Glebe field on the western side of the Old Manse, a corresponding break in these anomalies, together with a funnellike entrance that connects to the terminals of the enclosures, probably represents an entrance. Immediately to the north of this, a more complex series of enclosing elements is apparent with up to four possible ditches. At least two ditches can be identified continuing south, where they narrow and kink before curving eastward. Additional positive magnetic readings, indicative of cut features such as infilled ditches, abut and extend southwards from the main line of the vallum. These may represent additional segmentation of the enclosure complex. A series of linear striations representing modern cultivation truncate all of the features mentioned above. A more widely spaced set of rig and furrow marks, however, seem to respect the line of the outer vallum ditch on both the eastern and western sides of the enclosure. A number of possible ditch features have been identified within the southern portion of the interior. To the north, the modern graveyard and houses largely obscure any earlier features, but the townplan of Lossiemouth might preserve the northern line of the vallum. A series of anomalies recorded on the northern side of the modern graveyard confirm the presence and extent of the later Bishop's Palace. However, rather than a hexagonal plan as suggested by the *New Statistical Account (NSA* xiii 1845: Elginshire 151–2), the geophysical survey suggests a rectilinear groundplan, much more similar to that which still survives at nearby Spynie Palace (Walker & Woodworth 2015: 741–7).

In addition to the University of Aberdeen-led work, during the same period AOC Archaeology was commissioned by Tulloch of Cummingston Ltd to undertake survey and evaluation work in advance of housing development to the east of Kinneddar. This mainly focused on land to the east and south of the Bishop's Palace. This work comprised both geophysical survey and excavation. The geophysical survey employed a dual sensor Bartington Grad 601-2 gradiometer with data collected in zig-zag mode and at a resolution of 1m traverse and 0.25m sample intervals, covering a total area of approximately 4.55ha. The AOC survey produced near-identical results to the University of Aberdeen survey for the area immediately south of the modern graveyard, but the AOC survey also significantly extended eastwards allowing the eastern extent of the vallum ditches to be established (Illus 2 and 5). On the eastern side, the vallum enclosures, apparent as two bands of positive magnetic readings, run in a north/north-east direction and are spaced approximately 7-12m apart. These correspond with the results of the University of Aberdeen survey, which together show the southern and eastern extent of the vallum enclosures.

EXCAVATION

Following the geophysical results of 2015 and 2016, an evaluative excavation was undertaken in 2017 by the University of Aberdeen to ground-truth the geophysical results and to obtain an absolute chronology for the features identified. The objectives for the excavation were to confirm



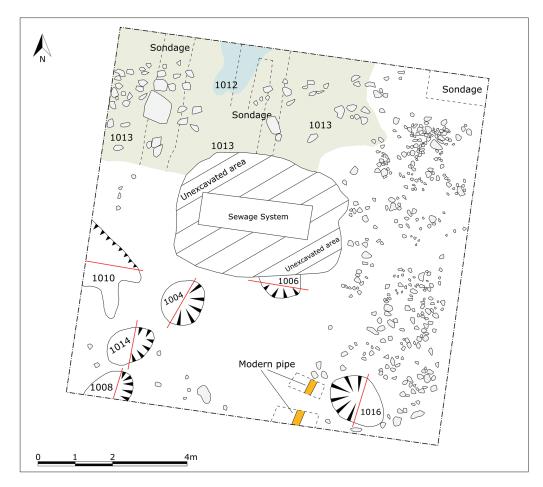
ILLUS 6 The position of the University of Aberdeen trenches (Base map © Crown Copyright/ database right 2018. An Ordnance Survey/EDINA supplied service)

and characterise the vallum enclosure(s) identified in the survey, confirm and characterise an annexe enclosure to the south and test interior areas of the vallum for surviving early to high medieval in situ deposits and features. No work was carried out in the modern cemetery, which remains in use today. The evaluation reported here took place over four days (6-9 October) and comprised a team of three professional archaeologists from the University of Aberdeen, 20 University of Aberdeen undergraduate students and four local volunteers. The fieldwork was carried out as part of the University of Aberdeen Honours-level undergraduate course 'Professional Archaeology I'. The excavation at Kinneddar was centred on NGR: NJ 22376 69668, immediately to the south of the graveyard, and comprised six trenches with a total excavation area of around 340m² (Illus 6), targeting the main enclosure boundaries identified in the survey and an area in the interior. The excavation areas were situated in a grassed field at c 10m AOD, with the land sloping to the east towards the former location of Loch Spynie. The underlying bedrock consisted of raised marine deposits of Holocene age – gravel, sand and silt. The trenches were opened by machine with all features subsequently excavated by hand.

Near the southern graveyard wall, four trenches were opened with features present in three out of four trenches (Illus 6). Trenches 2 and 5 had a single pit or truncated post hole in each, with a possible post pipe identified in the example from Trench 5. Trench 6 revealed no features of archaeological significance. In Trench 1, modern features such as a roughly north/south running plastic waste pipe and a centrally placed concrete sewer system restricted the extent of the excavations and had truncated some of the archaeological deposits. Nonetheless, within the ($c 10m \times 10m$) trench there were a number of features indicative of earlier activity, including a circular setting of large post holes ([1004], [1006],

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[1008], [1014] and [1016]) and two successive clay floor layers, [1012] and [1013] (Illus 7). The post holes appear to have formed the structural posts for a wooden building, though there were no surviving floor layers or hearths associated with these features. However, approximately half of this possible structure remains unexcavated and an associated hearth may be preserved in situ to the south. The posts were spaced up to 2m apart. It is possible that the modern waste pipe, which runs through the eastern section of this structure, may have truncated another post, which would explain the wide spacing between Post holes [1006] and [1016], however, this could also be interpreted as an entrance area. The post holes varied from 0.5m to 1.3m wide and 0.35m to 0.88m deep. Post hole [1016] was the largest example excavated in Trench 1 and the only one to produce definitive evidence for a post pipe (Illus 7 and 8). The post pipe measured approximately 0.3m wide and at the base of the post pipe fill there was a thin, folded strip of copper alloy. The copper alloy strip appears to have been part of a plain, functional fitting for protecting the end of a leather strap of some sort. Charcoal from Fill (1017) from the post hole was dated to cal AD 1030-1220 (SUERC-78797 900±35; 95% probability). The fills of the other posts [1004], [1006], [1008] and [1014] contained infrequent or occasional amounts of charcoal and small to medium-sized stones that could have been used as packing material. The upper fill (1009) of



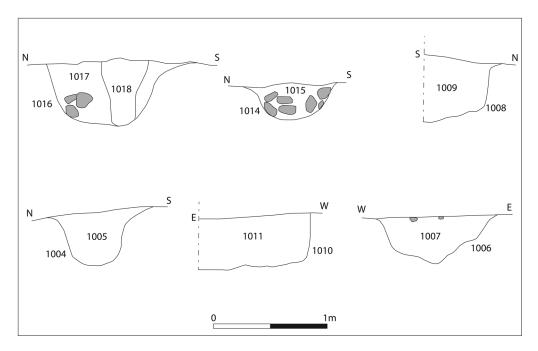
ILLUS 7 Trench 1 plan (© Authors)

Feature [1008] contained fragments of a possible deer mandible as well as a degraded animal horn. The deer mandible was dated to cal AD 970–1160 (SUERC-78796 1006±35; 95% probability). Immediately to the north-west of this structure, an irregularly shaped pit [1010] was identified which was around 2.2m by 1m wide and up to 0.4m deep (Illus 7 and 8). The edges of Pit [1010] appear to have been lined with flat, elongated stones. The fill contained a loose dark brown silty sand with frequent amounts of pebbles and medium stones, as well as infrequent amounts of charcoal and charred roundwood.

At the north-western corner of Trench 1, the remains of two successive clay floor layers were identified (Illus 7). The larger spread [1013] consisted of a deposit of compact greyish-yellow silty clay with a considerable number (c 50–60%) of medium-sized stones and slabs, covering an area approximately 7.2m×3.4m. In some instances, the stones seem to have been deliberately placed to form a level surface. The clay and stone deposit ranged from 0.1m to 0.25m deep, generally becoming thicker to the

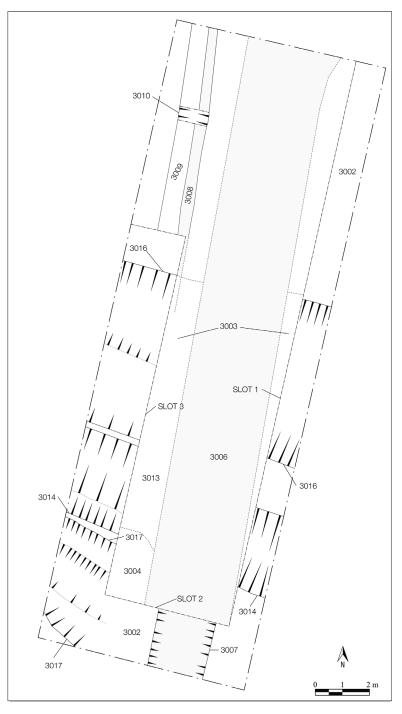
east. The spread was truncated to the south by the modern sewage system. Two sondages through Deposit [1013] revealed that this deposit was placed directly over the natural subsoil. Lying directly over Floor Layer [1013], another clay deposit, [1012], was recorded. This consisted of a compact greyish-blue silty clay. This layer covered an area of approximately $2.8m \times 0.7m$ and was 0.05m to 0.15m thick. Unlike [1013], Deposit [1012] did not contain any stones or slabs. Unfortunately the clay deposits excavated contained no datable material, but the features are suggestive of some sort of building foundation and suggest settlement deposits may survive extending northwards towards the modern cemetery.

Trench 3, which measured $10m \times 3.5m$, was located along the field boundary adjacent to the B9135 road, approximately 70m south of the graveyard. It was opened to investigate two lines of the possible vallum ditch. As noted above in the geophysical results, two large ditches can be seen arcing south-eastwards from the Glebe field to the west. The fainter of the two ditches

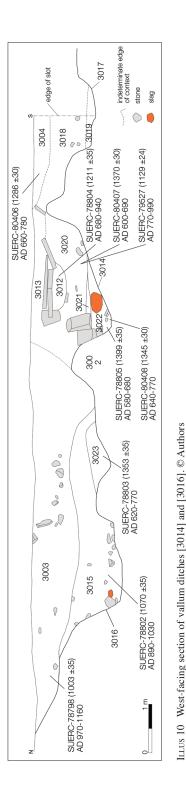


ILLUS 8 Sections of features excavated in Trench 1 (© Authors)

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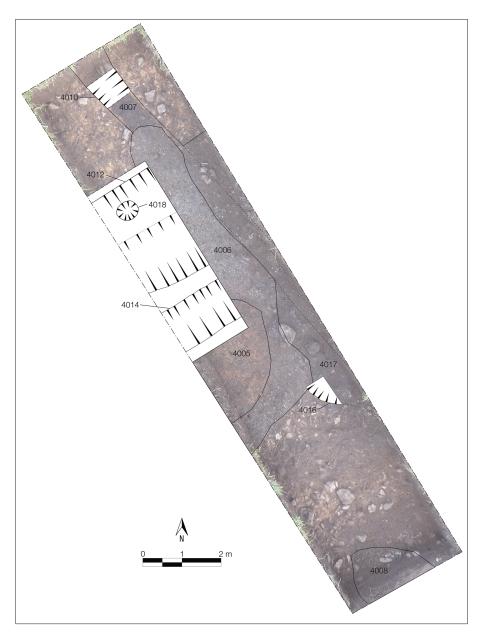


ILLUS 9 Plan of Trench 3 (© Authors)



on the geophysical survey was actually the larger identified in the excavation and likely to be the later of the two features. These ditches appear to cross over somewhere under the current B9135. It is likely therefore that these two ditches represent successive phases of a vallum enclosure rather than contemporary features. Two linear cut features, a field drain and a plough furrow [3010], truncated the earlier archaeological features in Trench 3, limiting the area of the ditch that could be investigated (Illus 9).

The smaller and earlier of the two ditches, Ditch [3014], was identified towards the centre of Trench 3. Ditch [3014] was 1.5m wide and 1.30m deep (Illus 9 and 10). The ditch had irregular slopes on its two opposing sides, suggesting that the ditch had been recut, with Fill (3020) within a recut. The basal fill (3022) of the ditch was a compact bluish sandy clay with occasional charcoal and cobble inclusions. The basal fill contained charcoal which produced radiocarbon dates of cal AD 580-680 (SUERC-78805 1399±35; 95% probability) and cal AD 640-770 (SUERC-80408 1345±30; 95% probability). Fill (3022) was overlain by (3021), a thin lens of light brown silty sand. At the intersection of Fills (3022) and (3021), a smithing hearth base was identified (see below). Above Fill (3021) was (3020), a mid-fill that may have been in a recut of the ditch. Fill (3020) was a mid-greyish-brown silty sand with occasional charcoal inclusions. Charcoal from (3020) was dated to cal AD 770-990 (SUERC-79527 1129 ± 24; 95% probability) and cal AD 600-690 (SUERC-80407 1370±30; 95% probability). Fill (3020) was cut by a pit or a further recut of the ditch with a brown-orange silty clay fill (3012), with frequent charcoal and occasional calcined bone inclusions. The edges of (3012) were marked by large stones. A large animal bone fragment from (3012) was dated to cal AD 680-940 (SUERC-78804 1211±35; 95% probability). The uppermost fill (3013) had unclear edges and could not be confidently distinguished from the upper fill (3003) of the secondary vallum ditch [3016], but the dating suggests [3016] cut the earlier ditch. Occasional charcoal and bone were recovered from (3013) and several large slabs sat at the interface between (3013) and the fill immediately beneath (3012).



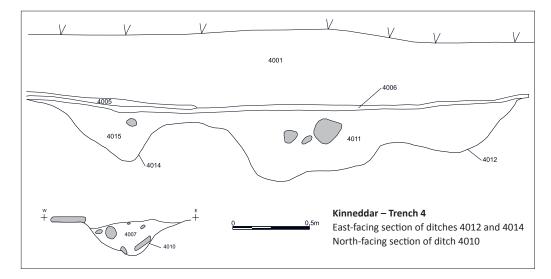
ILLUS 11 Plan of Trench 4 (© Authors)

The probable secondary valuem ditch [3016] existed up to a depth of c 1.8m and was around 5m wide (Illus 9 and 10). The edges were gently sloping and the base was flat, though irregular in parts, with a possible step, perhaps as a result of recutting the ditch. The ditch comprised at least three fills, primarily identified in section. Deposit

(3023), a relatively sterile dark brownishgrey silty sand, was a basal fill, charcoal from which returned an early date of cal AD 620–770 (SUERC-78803 1353 \pm 35; 95% probability). Fill (3023) may have been an earlier phase of the secondary vallum with the upper fills within a recut. The mid-fill (3015) consisted of a mottled orange and brown silty sand with occasional large slag fragments at the base and frequent cobble and stone inclusions. This may suggest the use of the ditch for metalworking or the discard of metalworking waste, similar to the evidence from Ditch [3014]. A cattle metatarsal from (3015) was dated to cal AD 890-1030 (SUERC-78802 1070 ± 35 ; 95% probability). The upper fill (3003) consisted of a medium brownish-grey clayey sand with occasional charcoal and frequent subangular stone inclusions. Animal bone (primarily cattle), shell fragments, flint, fragments of iron, slag and ceramic were recovered from (3003). The ceramics were from near the surface and comprised two sherds dating from the 12th to 13th centuries (see below). A large mammal long bone shaft fragment from the same context (3003) was dated to cal AD 970-1160 (SUERC-78798 1003±35; 95% probability).

Located immediately to the south of, and adjacent to, Ditch [3014], in the south-west corner of the trench, was a poorly defined cut feature [3017], either a pit or another ditch (Illus 9 and 10). Its limits could not be clearly identified as it extended beyond the excavation area and was heavily truncated to the east by the sewage pipe. It was at least 1.5m wide and 1.20m deep, with a stepped northern edge and a flat base. At least three loose fills were identified in section. At the bottom of the pit was a greyish-brown silty sand (3019) with frequent cobble inclusions. Above was Fill (3018), a light greyish-brown silty sand with occasional charcoal inclusions. The upper fill (3004) was a dark grey silty sand with occasional charcoal and bone inclusions as well as moderately frequent sandstone slabs. Charcoal from (3004) was dated to cal AD 660–780 (SUERC-80406 1286 \pm 30; 95% probability).

Trench 4 was located approximately 50m south-east of Trench 3, and was opened to investigate a large linear feature [4012] identified in the geophysical survey as a possible annexe enclosure (Illus 11). Two linear features were identified in the trench, Ditch [4012] and Ditch [4014], as well as an amorphous large pit [4016], a linear cut feature [4010] and a shell deposit (4008) (Illus 11). Feature [4012], orientated north-east/south-west, was 2m wide and 0.5m deep and filled by a dark brown sandy silt (4011) (Illus 12). It had straight edges and a U-shaped base and its northern edge was stepped, where a post hole [4018] was identified. Post hole [4018] was circular in plan, measuring 0.35m in diameter and was 0.15m deep. Its fill was very similar to Fill (4011) of the linear feature [4012]. The presence of a post hole could suggest that [4012], and perhaps also Feature [4014] located immediately adjacent, formed part of a palisaded



ILLUS 12 Sections of features in Trench 4 (© Authors)

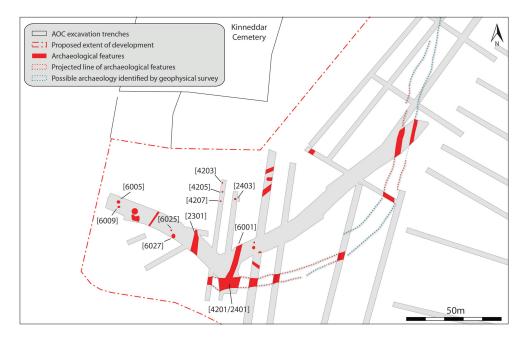
or fenced enclosure (Illus 11 and 12). Charcoal from Fill (4011) was dated to cal AD 1030–1210 (SUERC-78806 911 \pm 35; 95% probability). Alongside [4012], a shallow additional linear feature [4014], approximately 1m wide and 0.4m deep, ran parallel to the larger linear feature (Illus 11 and 12). This feature was filled by a dark brownish-black sandy silt (4015) with occasional bone and moderate stone inclusions. Two clay and silt deposits (4005, 4006) overlay Features [4012] and [4014].

A poorly defined cut feature [4016] was identified immediately south of Ditch [4014] (Illus 11). It was filled with mid-grey sandy silt (4017) with occasional small stone inclusions. Ditches [4012] and [4014] and Pit [4016] were truncated by a further feature [4010] (Illus 11 and 12). This linear feature, orientated north-west/ south-east, was located along the northern edge of the excavation trench. It extended to 0.25m in depth and 0.6m in width and was filled by a dark brown/black sandy silt (4007), charcoal from which was dated to cal AD 1020–1170 (SUERC-78807 938 \pm 35; 95% probability). The shallow shell deposit (4008) was located against the southern edge of the excavation trench (Illus

11), and was exposed after the removal of a light grey clayey-silt deposit (4003). The visible extent of the shell deposit was $0.5m \times 1m$ and it appeared to extend beyond the excavation trench to the south.

In addition to the University of Aberdeen excavation results, evaluation by AOC Archaeology produced additional information regarding the vallum to the east of the Aberdeen trenches. The AOC trenching was limited to a 7% evaluation of the development area to the east and south of the modern graveyard at Kinneddar, alongside stripping of an access road to the immediate south (Illus 13). The access road trench was a maximum of 8m wide. This trench, along with the linear evaluation trenches, allowed the larger of the two vallum ditches to be traced on its eastern limits.

A large ditch [4201/2401] (Illus 13), likely to be the same ditch as the secondary vallum ditch [3016] found in the University of Aberdeen excavation, was traced in at least six of the AOC evaluation trenches. The profile of Ditch [4201/2401] was very similar to [3016] identified in the University of Aberdeen project – around 4m to 5.6m wide and at least



ILLUS 13 AOC Archaeology trenches to the south and east of the modern graveyard (© Authors)

1m deep. The basal fill showed evidence of gradual silting and inwash, with upper deposits suggestive of much more rapid and deliberate backfilling. A radiocarbon date of cal AD 660–780 (SUERC-73462; 95% probability) was returned from ash roundwood charcoal from the base of one of the sections excavated across the ditch (Table 2). The uppermost fills produced redware and green glaze pottery likely to span the 13th–15th centuries (Haggarty 2018: 22–4). The upper fills also contained iron slag and hammerscale (McLaren 2018: 25). The latter is diagnostic of bloomsmithing or blacksmithing.

In the AOC evaluation, two north/south ditches were also identified to the north of the vallum ditch. Ditch [6001] (Illus 13) was cut by the vallum ditch. In the geophysical survey, this ditch can be identified heading northwards, but its route farther north is obscured by the modern field boundary. On the south side of the vallum, this ditch appears to curve south-east and may join up with Ditch [4012] identified in Trench 4 of the University of Aberdeen excavations. Ditch [6001] was around 3m wide and around 0.65m deep, with three distinct fills (6002), (6003) and (6004). Fill (6004), the basal fill of the ditch, comprised a dark brown/orange medium sand with charcoal flecking. A radiocarbon date of 2040-1880 cal BC (SUERC-73460) was obtained from the basal fill. A mid-fill (6002) was a dark brown medium sand and the uppermost fill (6003) was a similar material and appeared to lie within a recut of the ditch. While the radiocarbon date might suggest a prehistoric date for the ditch, it could be that this represents residual material and that the ditch cutting was a later event. Certainly, the fact that this feature aligns with medieval features identified in Trench 4 of the University of Aberdeen excavations might suggest it was a medieval feature, but at least one phase of it was cut by the vallum enclosure, though it may have been designed to connect to an earlier phase of the vallum. A further north/south linear ditch [2301] was also identified in the AOC trenching, but not dated. It was around 3m wide and 0.55m deep, with two fills. Metalworking slag was retrieved from the ditch fills. In addition to the ditches, a number of cut features [6009], [6025], [6027], [4203], [4205], [4207] and [2403] were identified (see Illus 13), representing isolated pits and post holes, but none were diagnostic and none of the features contained datable material. A well-constructed well [6005] was also found – measuring 1.9m north/south by 1.65m transversely. This was lined with stones and backfilled with material containing 13th- to 14th-century ceramics.

SPECIALIST REPORTS

THE FAUNAL ASSEMBLAGE

The University of Aberdeen excavations produced a small faunal assemblage (N=357) from Kinneddar which was the subject of an assessment, the results of which are reported below. The animal remains were mainly recovered from Fills (3003) and (3015) from the secondary vallum ditch [3016], from the fill (3012) of a pit or recut of the primary vallum ditch [3014], and from a fill (3004) of a large cut feature [3017] in Trench 3. These features represented 98% of the bone assemblage (Table 1). Animal bones were also recovered from the fill (1009) of Post hole [1006] in Trench 1 and from Clay Deposit (4006) in Trench 4. The animal bone was hand-collected and no bulk samples were taken for the recovery of faunal remains, potentially resulting in the underrepresentation of small mammal, bird, fish and amphibian remains (Reitz & Wing 2008). Nevertheless, small soil samples (of 2 litres) for the recovery of dating material were taken and processed in November 2017 at the University of Aberdeen and did not yield any faunal remains with the exception of calcined bones flecks or tiny fragments (<5mm).

Mammal bones were identified to species when possible, using the reference collection at the University of Aberdeen and with reference to Schmid & Garraux (1972), and if not were grouped into the following categories: large mammal (horse/cow/large cervid size), medium mammal 1 (sheep/goat/pig/small cervid size) and medium mammal 2 (dog/cat/hare size), based on Dobney et al (1999). There was no attempt to distinguish sheep from goat remains with all bones being recorded as sheep/goat (Caprini sp). The number of fragments with unfused

Taxon					Contexts				
Common name	Scientific name	1009	3003	3003?	3004	3012	3015	4006	Total
Cattle	Bos taurus		11		6	1	1	2	24
Cattle?	cf Bos taurus		1	2	1				4
Sheep/goat	Caprini sp		5	7	2		1		15
Sheep/goat?	cf Caprini sp		2		4				9
Pig	Sus scrofa		5				1		9
Pig?	cf Sus scrofa		4						4
Horse	Equus sp		1						1
Deer?	cf Cervidae	1	3						4
Large-sized mammal		1	11	17	7		1		37
Medium-sized mammal 1			27	15	11		6		62
Mammal indeterminate			82		64	7	14		167
Fish	Osteichthyes		1		3				4
Indeterminate				23					23
Total		2	153	64	101	8	27	2	357

TABLE 1 Faunal remains from Kinneddar

epiphyses were also recorded by species. These were recorded as neonatal (very small with an obviously spongy and porous appearance to the bone), juvenile (an obvious porous appearance to the bone but not as small as neonatal) or unfused (epiphyses unfused but the diaphysis appears to be adult in texture). The surface preservation of each recordable fragment was recorded as either 'poor', 'moderate' or 'good' and evidence of burning and gnawing was also noted. Evidence of butchery was recorded with reference to the type of mark displayed on the bone such as chops, cuts and sawing.

Out of the 357 bone fragments recovered from the excavation, only 68 fragments (19%) could be identified beyond class level with the remainder comprised mainly of long bone shaft fragments from large or medium-sized mammals. The assemblage was relatively well preserved based on bone surface condition (over 75% of fragments are considered in good condition) and there was no evidence of weathering, which suggests the rapid burial of the bones after their disposal (Behrensmeyer 1978). Their preservation in the archaeological layers could have benefitted from the sandy nature of most deposits and reflects low soil acidity. Other taphonomic factors can also affect the survival and condition of faunal assemblages - such as butchery, disposal patterns and gnawing. Butchery and gnawing were evidenced by the observation of rare cut marks (3%) and canid teeth marks (1.4%) on some specimens. Evidence of burning was noted on 8.6% of bone fragments with calcined fragments (N=19) slightly more frequent than charred or burnt fragments (N=12).

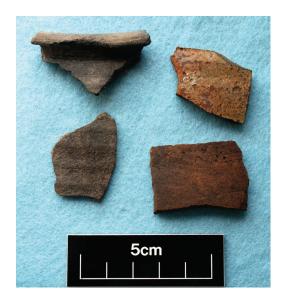
The bone assemblage was dominated by domesticates (cattle/ovicaprid/pig) representing 87% of the identified faunal remains, with cattle (41%) and sheep/goat (31%) far more frequent than pig (14.7%). Fish (N=4), horse (N=1) and possible deer remains (N=4) completed the faunal assemblage.

The small size of the assemblage prevented the analysis of body part representation. Cattle remains were primarily composed of head and feet bones, though shaft fragments from long bones of large mammals, probably cattle, may indicate the presence of most body parts, which would suggest that animals were brought in on the hoof or raised locally, as observed at Portmahomack (Seetah 2016: D134). Horn core was identified for both cattle and sheep, which could suggest the use of horn sheath. Cranial, long bones and feet bones were also identified among the sheep remains. With the exception of an unfused sheep/goat humerus and a deciduous pig third molar, all other specimens from cattle, sheep/goat and pig were fused, suggesting that the animal bones discarded in the features excavated came from adult individuals. Butchery marks were rare and consisted of occasional cut marks and chop marks observed on cattle and sheep bones.

Currently, the small size of the assemblage limits the interpretative value of the faunal remains from the evaluation, though some comments on the economy of the site and comparisons to the Pictish monastic site of Portmahomack (Carver et al 2016) can be made. The animal component of the economy was dominated by domestic animals, with the possible inclusion of wild animals. The presence of fish and shellfish in the assemblage suggests the exploitation of a marine environment, either from the sea or Loch Spynie, but the numbers are very small. This pattern of predominance domestic species combined with the of exploitation of the local environment was also observed at Portmahomack (Seetah 2016). The uncommonness of juvenile individuals in the Kinneddar assemblage suggests perhaps a focus on the use of cattle and sheep/goat for secondary products. This was also observed at Portmahomack, where cattle were the main source of traction power, dairy products and leather (Seetah 2016: D135). There was no evidence for the production of vellum at Kinneddar as no specimens were from calves under 6 months old (Carver 2016). At Kinneddar, the presence of a juvenile pig specimen may relate to meat production and pigs were perhaps the primary source of meat. However, pigs were uncommon and meat production was perhaps not the main concern based on the features excavated, an observation made by Seetah for the Portmahomack assemblage (Seetah 2016: D135).

MEDIEVAL POTTERY

Fourteen sherds of medieval pottery were examined by eye and ×10 lens and identified where possible to known fabric types and vessel forms. No petrological or chemical analysis has been undertaken. There are two sherds in a distinctive gritty black brown fabric type from (3003): (FN6 and FN12), a single slightly hooked everted rimsherd and a rilled bodysherd (Illus 14). Pottery of this form has previously been recovered from excavations on Elgin High Street in the mid-1980s and at Duffus Castle (Cannell & Tabraham 1995: 388, illus 6, cat 2; Hall et al 1999: 764, illus 5, cats 20-4) and dated to the 12th century. Chemical analysis funded by Historic Scotland suggested that this may be a locally produced product, although so far no production sites have been located (Jones et al 2003: 66, 71, 79-80). The remaining sherds are from Scottish Redware vessels in a micaceous version of a widespread Scottish pottery tradition (Illus 14). Chemical sourcing, again funded by Historic Scotland, has suggested that



ILLUS 14 The medieval pottery from Kinneddar. (Left) Rim and bodysherd from cooking vessels in local gritty fabric and Scottish Redware; (right) bodysherds from glazed and unglazed Scottish Redware jugs (© Authors)

there were production centres in all of the main Scottish river valleys where there were abundant sources of red firing blue clays (Haggarty, Hall & Chenery 2011). The same study indicated that it was possible to chemically separate Redwares from Elgin and Spynie Palace due to their very distinctive signatures. The sherds from Kinneddar are from both cooking vessels and jugs, with jugs being better represented. There is a single piece of splash glazed roof tile from (3003) (FN10). This small group of pottery is quite tightly dated to the 12th-13th centuries, with only the roof tile fragment (3003 FN10) and unglazed rim (3003/3009 FN11) being of a potentially slightly later date (13th-15th centuries). The presence of the potentially 12th-century gritty fabric is of interest and those sherds could usefully be chemically sourced to confirm their similarity to the fabrics from Elgin and Duffus Castle.

IRONWORKING DEBRIS

Three fragments of ironworking debris were recovered (a full catalogue is in the archive). A smithing hearth base was recovered at the intersection of Contexts (3022) and (3021) in the primary vallum fill. In addition, two fragments were obtained from the secondary vallum fill (3015), including a small undiagnostic fragment and one more complex form, comprising two plano-convex bases superimposed with a thin layer of charcoal in between, probably deriving from bloom-refining.

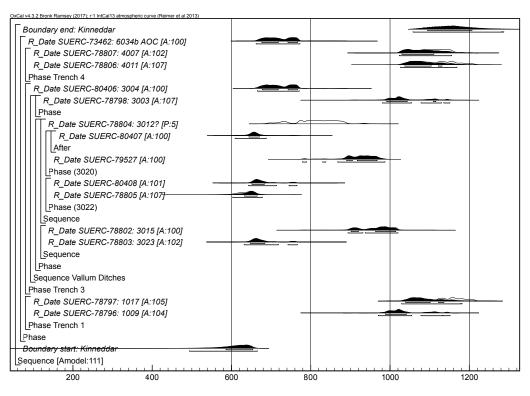
Though this assemblage is very small, several features allow us to interpret the potential scale and nature of early medieval ironworking activity at Kinneddar. Superimposed slag cakes, as found in the primary vallum ditch, indicate repeated activity in the same hearth without clearing it out, suggesting this was a regular activity and that the hearths were substantial enough to allow for this. That fragments have been recovered from the fills of both the earlier and later ditches suggests ironworking was potentially taking place over several centuries.

Ironworking evidence is a common feature of other early medieval ecclesiastical sites in Scotland, for example the Period 2 and 3 metal

workshops at Portmahomack (AD 700-1100) (Spall & Mortimer 2016: D107-11), industrial areas in Periods I-IV at Whithorn (Hill 1997) and substantial spreads of ironworking debris at Iona (Campbell & Maldonado 2016: 90; forthcoming; Cruickshanks 2018). Although ironworking was a major activity on roundhouse settlements in Moray up until around the 1st/2nd centuries AD, a lack of securely dated early medieval evidence leaves an incomplete picture of how the craft continued to develop there (Cruickshanks 2017: 159-214). Despite the small amount of evidence, the ironworking debris from Kinneddar is therefore a significant addition to our understanding of the organisation and development of ironworking in this area.

DATING

A total of 13 radiocarbon dates are available from the University of Aberdeen trenches and one from the AOC excavation of the vallum ditch. The dates are from single-entity samples (Ashmore 1999) of wood charcoal and animal bone with the samples processed by the Scottish Universities Environmental Research Centre (SUERC) Radiocarbon Dating Laboratory. The samples were pretreated following the protocols described in Dunbar et al (2016). Graphite targets were prepared and measured following Naysmith et al (2010). SUERC maintains rigorous internal quality assurance procedures and participation in international inter-comparisons (Scott et al 2003, 2007, 2010) indicates no laboratory offsets, thus



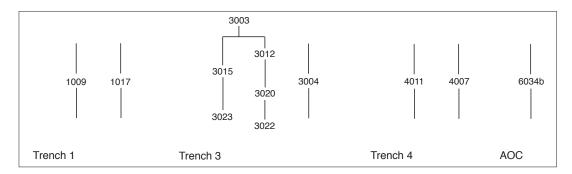
Modelled date (cal AD)

ILLUS 15 Chronological model for the dated activity at Kinneddar. For each of the radiocarbon measurements two distributions have been plotted, one in outline, which is the result of simple radiocarbon calibration, and a solid one, which is based on the chronological model use. The other distributions correspond to aspects of the model. The large square 'brackets' along with the OxCal keywords define the overall model (© Authors)

Site	Lab No.	Material	$\delta^{I3}C$	Context	Radiocarbon Age (BP)	Calibrated date (95% confidence) cal AD (unless otherwise stated)
Kinneddar	SUERC-73460	Charcoal: Alder	-26.2	Ditch [6001] basal fill; AOC Archaeology evaluation	3598±32	2040–1880 cal _{BC}
Kinneddar	SUERC-73462	Charcoal: Alder	-26.2	Secondary vallum ditch basal fill 6034b; AOC Archaeology evaluation	1286±32	660–780
Kinneddar	SUERC-78796	Animal bone: Deer mandible	-22.7	Pit fill 1009	1006 ± 35	970-1160
Kinneddar	SUERC-78797	Charcoal: Corylus cf avellana	-25.8	Pit fill 1017	900 ± 35	1030-1220
Kinneddar	SUERC-78798	Animal bone: large mammal shaft fragement	-22.0	Secondary vallum ditch upper fill 3003	1003 ± 35	970–1160
Kinneddar	SUERC-78802	Animal bone: cattle metatarsal	-22.2	Secondary vallum ditch lower fill 3015	1070 ± 35	890-1030
Kinneddar	SUERC-78803	Charcoal: Corylus cf avellana	-26.2	Secondary vallum ditch basal fill 3023	1353 ± 35	620–770
Kinneddar	SUERC-78805	Charcoal: <i>Fraximus</i> sp	-26.1	Primary vallum ditch basal fill 3022	1399 ± 35	580-680
Kinneddar	SUERC-80408	Charcoal: Indeterminate	-24.8	Primary vallum ditch basal fill 3022	1345 ± 30	640-770
Kinneddar	SUERC-80407	Charcoal: Ericales	-26.7	Primary vallum ditch mid fill 3020	1370 ± 30	600-690
Kinneddar	SUERC-79527	Charcoal: Salix sp	-26.8	Primary vallum ditch mid fill 3020	1129 ± 24	770–990
Kinneddar	SUERC-78804	Animal bone: large herbivore atlas	-22.3	Primary vallum ditch upper fill 3012	1211 ± 35	680–940
Kinneddar	SUERC-80406	Charcoal: <i>Ericales</i>	-27.0	Large pit/additional ditch Trench 3; Cut 3017, upper fill 3004	1286±30	660–780
Kinneddar	SUERC-78806	Charcoal: <i>Betula</i> sp	-24.8	Annexe enclosure/field boundary 4012, fill 4011	911±35	1030–1210
Kinneddar	SUERC-78807	Charcoal: Corylus cf avellana	-27.1	Annexe enclosure/palisade 4010, fill 4007	938±35	1020-1170

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TABLE 2 Radiocarbon determinations from Kinneddar



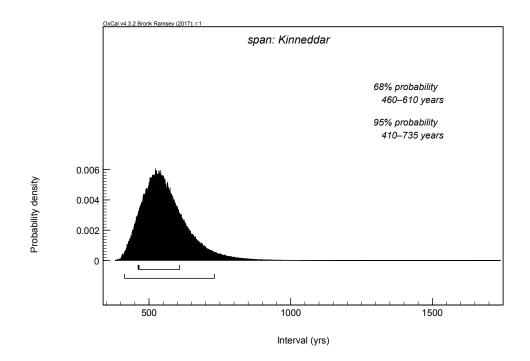
ILLUS 16 Simplified matrix of the dated contexts from Kinneddar (© Authors)

validating the measurement precision quoted for the radiocarbon ages.

Conventional radiocarbon ages (Stuiver & Polach 1977) are presented in Table 2, where they are quoted in accordance with the Trondheim convention (Stuiver & Kra 1986). Calibrated date ranges were calculated using the terrestrial calibration curve (IntCal13) of Reimer et al (2013) and OxCal v4.3 (Bronk Ramsey

1995, 1998, 2001, 2009). The date ranges in Table 2 have been calculated using the maximum intercept method (Stuiver & Reimer 1986) and quoted with the endpoints rounded outward to ten years. The probabilities shown in Illus 15 were calculated using the probability method of Stuiver and Reimer (1993).

A Bayesian approach has been applied to the interpretation of the chronology of Kinneddar



ILLUS 17 Probability for the span of activity at Kinneddar, as derived from the chronological modelling shown in Illus 15 (© Authors)

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(Buck et al 1996). Although simple calibrated dates are accurate estimates of the age of samples, this is not usually what archaeologists really wish to know. It is the dates of the archaeological events represented by those samples that are of interest. In this case, for example, it is the timing of the activity associated with the digging and infilling of the vallum ditches, rather than the dates of individual samples, that is of interest. The chronology of this activity can be estimated not only by using the absolute dating derived from the radiocarbon measurements, but also by using the stratigraphic relationships between samples and the relative dating information provided by the archaeological phasing.

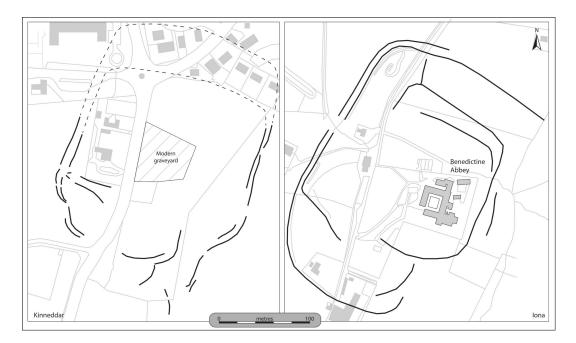
Methodologies are now available that allow the combination of these different types of information explicitly, to produce realistic estimates of the dates of archaeological interest. It should be emphasised that the estimates produced by this modelling are not absolute; they can and will change as further data becomes available and as other researchers choose to model the existing data from different perspectives. The technique used is a form of Markov Chain Monte Carlo sampling and has been applied using the program OxCal v4.3 (Oxford Radiocarbon Accelerator Unit). Details of the algorithms employed by this program are available in Bronk Ramsey (1995, 1998, 2001, 2009) or from the online manual. The algorithm used in the models can be derived from the OxCal keywords and bracket structure shown in Illus 15.

The radiocarbon results and their location within the observed stratigraphy of the site has been discussed in detail in the previous sections. The modelled relationships between the samples can be seen in Illus 16. Of particular note is the sequence of dates in the vallum ditches in Trench 3. Context (3022) is the basal fill of the second ditch, from which there are two results on fragments of charcoal, placing it in the 6th-8th centuries cal AD. Fill (3022) is overlain by (3021), which is a deposit that contains metalworking debris, and above this is (3020) from near the base of which there are two results that are considerably different in date. SUERC-80407, from Ericales sp charcoal, dates to the 7th century cal AD, while SUERC-79527, on willow charcoal, dates to the 8th to 10th century cal AD. Since the two results are from the same environmental sample, near the base of this thick deposit, SUERC-80407 has been included as a *terminus post quem* for the context in the modelling, since it is likely reworked material. Cut into (3020) is a pit or later ditch (3012) cutting into Fill (3020). This feature contained frequent charcoal and cremated animal bone. The radiocarbon date (SUERC-78804) from (3012) is on a large herbivore atlas, and it is earlier than the date (SUERC-79527) from the underlying (3020). Therefore, this animal bone is considered to be residual in the context and has been excluded from the modelling.

With these two adjustments made, the radiocarbon dates have good agreement (Amodel=111) with the archaeological information. The model estimates that the overall activity at Kinneddar began in cal AD 500-670 (95% probability; Illus 15; start: Kinneddar), and probably in cal AD 585-655 (68% probability). The overall activity as represented by the samples dated ended in cal AD 1050-1280 (95% probability; Illus 15; end: Kinneddar) and probably in cal AD 1090–1200 (68% probability). The span of the dated activity is 410-735 years (95% probability; Illus 17; span: Kinneddar) and probably 460–610 years (68% probability). Assessing the dating of the vallum ditches is difficult given the recutting of these features and the incorporation of residual material. However, for Ditch [3014] the stratigraphically earliest sample dated (SUERC-78805) from (3022) provides a terminus ante quem of cal AD 600-680 (95% probability; Illus 15; SUERC-78805) and for Ditch [3016], SUERC-78803, the modelled result provides a terminus ante quem of either cal AD 630-720 (86% probability; Illus 15; SUERC-78803: 3023) or cal AD 740-770 (9% probability). The latter is closer to the radiocarbon date (SUERC-73462), cal AD 660-780, from the basal fill of the vallum ditch excavated by AOC Archaeology.

DISCUSSION

Various strands of evidence highlight the importance of Kinneddar as a major



ILLUS 18 A comparison of the layout of Kinneddar and that of Iona (© Authors)

ecclesiastical site in the early medieval period. The sculptural evidence is extensive and displays connections to other major Pictish ecclesiastical sites as exemplified by the David fragment (eg Henderson 1998: 130; Dransart 2001; Henderson & Henderson 2004: 129-30). The vallum enclosed an extensive area that is likely to have been around 8.6ha and the presence of annexe enclosures/field boundaries dating to the 11th-12th century suggests the size and importance of the site grew through time. The radiocarbondating evidence from Kinneddar suggests activity as early as the late 6th century and certainly by the 7th century, with the primary vallum ditch dug sometime after cal AD 600-680. Unlike at Portmahomack, there is no evidence of a hiatus in the Viking Age with the vallum ditch continuing to be infilled into the early 2nd millennium AD.

The full layout of the vallum at Kinneddar remains unknown due to urban development to the north of the site, but the emerging plan has some striking resemblances to other major contemporary ecclesiastical sites. The layout of the vallum, for example, shows parallels to Portmahomack, which is likely to have comprised a similar sub-rectangular form, though the area enclosed at Portmahomack is likely to have been much more modest (Carver et al 2016: 37; see Campbell & Maldonado forthcoming: fig 15 for other rectilinear plans in Scotland; these contrast to the Irish generally circular vallum forms). The nearest parallel in terms of form and scale to Kinneddar is Iona, which was enclosed with a very similar sub-rectangular series of vallum ditch(es), with a very similar doubling of the ditch on the west side (formerly identified as a unique feature at Iona (Campbell & Maldonado forthcoming)), with both sites having annexe enclosures on the south side and both encompassing a similarly sized enclosed area (Illus 18). The dates for the vallums at each site are also broadly similar (Campbell & Maldonado forthcoming: table 2).

The structural and dating parallels between the enclosure at Kinneddar and those at Iona are intriguing and perhaps suggest very direct connections between the Columban Church and the establishment of Kinneddar. Our understanding of the spread of Christianity to the Picts is still very hazy. Traditional accounts of the conversion of northern Pictland have, following Bede, focused on St Columba and his immediate successors, but it is likely that the conversion process was complex (Fraser 2009: 68-115; Clancy 2008: 363-4, 392). As Adomnán's Life of St Columba, written c 697, indicates (Sharpe 1995), Columba was involved in some missionary activity, but recent accounts have suggested that the role of the Columban Church in the conversion process in northern Pictland has been exaggerated (Taylor 1996; Fraser 2009: 97-9, 103-5). Nevertheless, Iona was clearly a prestigious monastery in the 7th and 8th centuries, with daughter houses in Ireland, Northumbria, Dál Riata and presumably Pictland (Herbert 1996: 9-56), so even if Kinneddar was not a Columban establishment, it may have been a place whose layout was to be emulated. Fraser (2009: 94-115, 253-63, 269-82) has argued that Iona was particularly influential in the Pictish Church in the late 7th and early 8th centuries, which might explain the similar shape of the enclosures at Iona, Fortingall, Portmahomack (and Kinneddar) (Foster 2014: 121-2), but this does not prove that any of the Pictish sites were Ionan foundations, since aspects of Columban practice may have been widely adopted, particularly at sites receiving royal patronage.

The material evidence from Kinneddar is as yet slight, but the metalworking evidence from the excavations can be highlighted. The evidence for metalworking found in various fills of the vallum ditch would suggest Kinneddar, like Portmahomack, was an important centre of production and the size of enclosure would suggest that it contained areas of extensive settlement and industry. Indeed, the size of the vallum enclosures can again be highlighted with the newly identified vallum on a par with the larger ecclesiastical enclosures found in regions such as Ireland where we have a better understanding of the range and form of ecclesiastical enclosure complexes (O'Sullivan et al 2014: 147). In Ireland, where the scale of excavation has also been larger, the larger ecclesiastical sites have been compared to urban settlements, dubbed in some cases as 'monastic towns' (eg Doherty 1985). Doherty (1985) suggested that some of the most influential sites were large religio-economic

complexes incorporating social, religious, administrative and commercial functions. Doherty's writings have generated fierce debate (eg Graham 1987; Swift 1998; Valante 1998; Etchingham 1999), but it is the case that the larger ecclesiastical sites, such as Clonmacnoise, were important consumer centres that can be compared, in some respects, with the urban centres such as Dublin (O'Sullivan et al 2014: 177). The abundant evidence for intensified economies and for the use of technological advances such as mill technology and fish trapping has helped underline the importance of these sites in early Irish society (Davies & Flechner 2016). The more limited evidence for these innovations in regions such as Wales and Scotland led Davies and Flechner to suggest that Ireland's economy was transformed more in the early medieval period than the other countries (Davies & Flechner 2016: 381-2, 384-5). However, in Pictland, apart from Portmahomack, few sites have been excavated on any scale and the relative lack of excavations of all types of sites in Pictland compared to Ireland means that it is difficult to compare the relative development of sites until more sites have been investigated.

In terms of wider context, the only other archaeologically investigated early ecclesiastical centre in northern Pictland is Portmahomack. Portmahomack has been interpreted as having origins as an elite settlement in the 5th to 7th centuries AD, based on a small number of structural remains and finds, some early cist burials and a possible barrow cemetery (Carver 2016: 89; Carver et al 2016). The monastic settlement began sometime in the late 7th or early 8th century AD. Within the vallum, on either side of a road heading towards the church, evidence for craftworking was found with the production of precious metalwork, glass and vellum being undertaken to the south of the church. Large timber buildings were also identified at the site and those, along with the evidence for the management of water with a dam, bridge and pool and other structural remains, suggest a densely populated site. During the excavations, hundreds of fragments of sculpture were found with different types of monument identifiable. These included simple cross-marked stones,

grave markers, the lid of a sarcophagus, a possible panelled shrine, a corbel for a stone church and fragments of four monumental cross slabs (Carver et al 2016: 167). At the church, 58 burials from Period 2, the monastic phase, were identified, the vast majority mature males, which is strongly suggestive of a monastic population. The evidence from Portmahomack points to the rich data that can be obtained from larger-scale investigation of early church sites in northern Pictland.

Other important church centres in northern Pictland are likely to have included Rosemarkie, Easter Ross, argued to have been the episcopal centre for Fortriu (Woolf 2007a: 56). The urban area around Rosemarkie is significantly built up, making identification of any kind of enclosing vallum (if one existed) difficult. Nonetheless, a large body of early Christian sculpture survives from the site and is of a sufficiently diverse character to suggest a very important early church existed here. The sculptural assemblage includes a magnificent cross slab, decorated panels and what may be architectural fragments (Henderson & Henderson 2004: 66, 211).

Nearer to Kinneddar, the impressive Pictish fort at Burghead also preserves important examples of early Christian sculpture. The sculpture appears to have been associated with an early chapel, depicted on General Roy's 18th-century map as a level area adjacent to the entrance causeway through the outer defences of the fort (Oram 2007: 256). The chapel at Burghead and a nearby well are dedicated to St Aethan, a dedication which could be to any one of the many saints who shared this name, including the Columban Bishop Aidan of Lindisfarne who died in 651 after evangelising among the Northumbrians (Ó Riain 2011: 71-5, 183-208; Macquarrie 2012: 322). The sculpture from Burghead includes fragments bearing interlace and key-pattern that may be from a cross slab or series of cross slabs, a slotted corner slab and a fragment of a panel with a carving of a stag being brought down by hounds (Henderson & Henderson 2004: 203). The latter two fragments suggest the presence of composite shrine monuments or a sarcophagus of the type found at Kinneddar. There is also a fragment from a small cross slab with a reliefcarved cross on the front and a mounted warrior on the back. The sculptural evidence hints at an important early Christian site being a key feature of the fortified settlement at Burghead in the 8th and 9th centuries AD, contemporary with at least some phases of the ecclesiastical site at Kinneddar.

All of these sites – Portmahomack, Rosemarkie, Burghead and Kinneddar - may have lain within the bounds of the powerful kingdom of Fortriu (Woolf 2006: 201), and the rich sculptural evidence from these sites may indicate these were among the larger ecclesiastical establishments within the kingdom - at least once it had expanded its control in the late 7th century. However, it is likely that there was a patchwork of ecclesiastical sites of different sizes and forms within this area of northern Pictland (cf Clancy 2008: 391). In the same broad area there are more modest enclosed sites with possible evidence for an early church, and small collections of sculpture at sites such as Congash, Inverness-shire, that may represent examples of important, but smaller-scale, ecclesiastical establishments (Canmore ID 15675). Within north-eastern coastal areas of Easter Ross, Inverness-shire and Moray there are also sites with isolated cross slabs such as those found at Edderton, Ross and Cromarty; Glenferness House, Invernessshire; Rodney's Stone (Brodie), Moray; and the fine granite example at Elgin Cathedral (Allen & Anderson 1903: 135-6). These form part of a rich corpus of medieval sculpture across the area stretching from Moray to Easter Ross, but this surviving evidence may suggest that royal patronage flowed to particular locations in this region of northern Pictland. The David imagery on the cross slab at Nigg, on a recumbent grave marker at Kincardine, Sutherland, and on the shrine fragment from Kinneddar, for example, stands out and has been used to suggest royal patronage (and perhaps burial) was concentrated at these particular ecclesiastical establishments (Henderson 1998: 154-6: Fraser 2009: 360).

Given Kinneddar's possible connections to Iona, the size of its vallum enclosure and the suggestions of royal patronage within the sculptural assemblage, what role might the site have played in the wider ecclesiastical organisation of northern Pictland? Given that Kinneddar was one of the three seats of the bishops of Moray in the immediate period before the cathedral was fixed at Spynie in the early 13th century, it is tempting to argue that Kinneddar had a similar role earlier. Certainly the concentration of important later ecclesiastical sites in this area at Kinneddar, Spynie, Elgin and Birnie, all closely connected to the bishops of Moray, suggests that it had particular significance by the 12th century, but how this developed - for instance when Kinneddar came under episcopal control - is uncertain. Alex Woolf (2007b: 316-20) has suggested that before the 12th century bishops had no fixed seat but were instead itinerant chorepiscopi. Certainly in Ireland at the same time, the centres, areas of authority and hierarchies of bishoprics could change over time (Etchingham 1999: 177-94) so we should not necessarily expect a permanent episcopal situation in early medieval Pictland. However, the surviving sculptural evidence from Kinneddar is currently unrivalled in Moray and it undoubtedly had an important role in the ecclesiastical organisation of the area in the early medieval period.

The place-name and dedicatory evidence might contribute a little more. The place name of Kinneddar derives from Gaelic cenn, 'head, end' (either in terms of promontory or a chief place), plus foithir, probably derived from a Pictish word meaning something like 'district, region', thus it means 'end of the *foithir* (district)' (Taylor 2011: 107; Taylor with Márkus 2012: 325, 376-8). It contains the same elements as the parish name of King Edward, farther east in Aberdeenshire, where Taylor has suggested that the parish name refers to the same entity as represented by nearby Fedderate, the centre of a late medieval barony whose name also contains *foithir* (Taylor 2008: 277-8, including n 11). Foithir is Gaelic in form, but its use in place names is largely confined to eastern Scotland, and it is often found in highstatus names, including parishes, such as the promontory fort of Dunottar in Kincardineshire, and the area of Fothrif (foithir plus Fib, 'Fife' (Taylor with Márkus 2012: 72-89, esp 73)), so it seems to have been a similar-sounding Pictish term adopted into Scottish Gaelic, although a full study is still needed (Taylor 2011: 107; Taylor with Márkus 2012: 376–8). Further research on *foithir* names is required before a more exact date range and meaning can be determined, but at least in the case of Fothrif, Taylor regards it as quite plausible that it originated as a sub-division of Fife in the time of the Pictish kingdom. Similarly, Kinneddar may have been either a centre or more likely a subordinate focus to an administrative unit in the area. Given the area's geography, largely cut off from the mainland, it is likely that Burghead was a significant part of the same entity, probably the territory's centre.

In terms of the dedication of the site, according to The Aberdeen Breviary published in 1510, Kinneddar was initially an oratory or cell, with a 'stone bed' established by Geruadius, an Irish saint and miracle worker (Dransart 2001: 239; Clancy 2008: 378; Macquarrie 2012: 266-9). The Irish ancestry given to him in the text is not trustworthy (Macquarrie 2012: xxix, 365), but nor are later texts which depict a Gervadius as a bishop of Moray (Dransart 2003: 241), since they probably reflect the late medieval episcopal significance of Kinneddar, rather than necessarily reflecting any earlier tradition. Later, more modern, texts about the area mention sites in the parish linked to a hermit called St Gerardine (OSA iv 1792: 85; Grant & Leslie 1798: 122; NSA xiii 1845: Elginshire 149; Keith 1975: 11-13). As Thomas Clancy, following earlier scholars, has asserted, both Geruadius, Gervadius and Gerardine are forms of the same name, Gartnait (Clancy 2008: 378; cf Forbes 1872: 355), so it is likely that the parish's dedication was to a saint of this name. Gartnait is a name found elsewhere in the Pictish king-lists (Anderson 2011: 246-8), in the notes in *The Book of Deer* for a 12th-century mormaer of Buchan (Broun 2008: 346-8; Clancy 2008: 378), in the 7th century in a leading Gaelic kindred based on Skye (Fraser 2004: 85-9; 2005: 129) and is last found in the Irish chronicles in The Annals of Ulster at 716.2 (Mac Airt & Mac Niocaill 1983: 170). The name does not necessarily identify the bearer as 'Pictish', but its distribution in Pictland, east of the Highland watershed and in the northern part of the western seaboard, indicates that the Gartnait dedication at Kinneddar celebrated a local or regional saint or an important Pictish secular figure associated with the site. The appearance of Gartnait in the king-lists might suggest royal connections, which can sit alongside the evidence for royal connections displayed in the sculpture, most prominently in the figure of David, but, given the slim textual evidence we have, this remains largely speculation.

CONCLUSIONS

The new evidence from Kinneddar highlights the site as a major ecclesiastical centre of northern Pictland that was established by the late 6th to 7th century AD. The vallum enclosures are the largest yet identified in northern Pictland and the recent excavations suggest important information on the character of the site is preserved despite intensive cultivation and redevelopment of the area in recent centuries. Previous archaeological work at the site of Kinneddar, like Iona, has been piecemeal, with a litany of research and development-led excavations failing to really grasp the significance of the surviving archaeology (cf O'Sullivan 1999). Some of our traditional evaluation methods perhaps struggle to deal with sites on this scale. However, the survey and excavations outlined here have set the archaeology of Kinneddar on a more solid footing and hopefully future work at the site can continue to flesh out our picture of this important site and landscape. In particular, evidence for the context of the sculptural evidence from the site is wanting and the evidence for settlement and metalworking is likely to be significantly increased with further work. The modern town of Lossiemouth and more recent development to the east have begun to encroach on the site, but large areas are still to be explored and future archaeological investigation can undoubtedly reveal more regarding the character of this major ecclesiastical site of Pictland.

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Abstract pattern on stone fragments from Applecross: the master carver of northern Pictland?

Cynthia Rose Thickpenny*

ABSTRACT

Eighteen early medieval carved stone fragments (Applecross 5.1-5.18) were recently recovered from Applecross, Wester Ross, Scotland, a site that functioned as an important ecclesiastical centre in the early medieval period. These 18 fragments join a pre-existing collection of monuments and other carved stones at Applecross, including three fragments (Applecross 1, 2 and 3) that together likely belonged to the same cross slab. Both the Applecross slab (Applecross 1-3) and the newly discovered fragments are decorated with relief-carved, geometric ornament common to early medieval Britain and Ireland, including interlace, key and step patterns, and are of exceptional workmanship.

This paper presents a comparative analysis of the patterns, which reveals that at least 16 of the 18 new fragments also belonged to the same monument as Applecross 1–3. In particular, the author has applied a new, artist-focused, artwork-centred approach to the study of key pattern and its structure, drawn from her doctoral research of this type of ornament. Through close physical analysis of the internal symmetry of individual spiral units and the negative (carved-out) lines in these key patterns, it is possible to identify where the new fragments were located on the Applecross monument, as well as their orientation within it. Furthermore, detailed analysis of the patterns' negative lines confirms that Applecross was linked to Nigg and likely also to Rosemarkie – two contemporary, high-status, Pictish ecclesiastical sites in Easter Ross – and that a single carver or team produced stone sculpture in all three places. The Nigg cross slab and Rosemarkie's collection of carved stones are widely recognised as among the finest in the Pictish corpus, and the Applecross fragments rival them in their supreme, virtuoso quality. This is the first concrete evidence for a single Pictish artistic hand on multiple artworks – a master carver or expert team whose oeuvre spanned both Easter and Wester Ross and who created some of the greatest surviving art-historical monuments in Britain.

INTRODUCTION

Applecross, in Wester Ross, Scotland (NG 7135 4583, Canmore ID 11734), was a well-known and important ecclesiastical centre during the early medieval period. Four stone sculptures have previously been discovered at the site and are now housed in its Heritage Centre and the churchyard. Three of these four sculptures are carved with complex abstract ornament characteristic of the early medieval period in Britain and Ireland, including interlace (knotwork), key pattern (composed of repeating angular spiral shapes or units) and curvilinear spirals. Ian Fisher has suggested that these three ornamented sculpture fragments, which he numbered as Applecross 1, 2 and 3, originally belonged to a single cross slab (Fisher 2001: 87–90) (Illus 1). The author agrees with Fisher's argument that these three extant fragments were originally part of the same monument, and so they hereafter will be referred to collectively as 'the Applecross cross slab'.

In 2016 and 2017, an assemblage of 18 more carved stone fragments (Applecross 5.1–5.18) were recovered from the site. The majority of these fragments are decorated with key pattern or interlace. This article will focus on these 18 newly discovered fragments and the structure of their ornament, in particular their key patterns. These patterns reveal new evidence not only

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regarding the Applecross cross slab itself, but also of Applecross's early medieval ecclesiastical connections further afield. Close physical study of the patterns reveals that 16 of the 18 fragments originally belonged to the Applecross cross slab and makes it possible to identify their former locations on that slab. Detailed analysis of the new fragments also suggests that the Applecross monument was directly linked to contemporary sculptures at Nigg (NH 8046 7171; Canmore ID 15280) and likely also Rosemarkie (NH 7372 5763; Canmore ID 14393), two high-status, Pictish ecclesiastical sites in Easter Ross, and that a single carver or workshop team produced stone sculpture in all three places. The Nigg cross slab and Rosemarkie's collection of carved stones - both dated art-historically to the same period as the Applecross fragments - are widely recognised as among the finest in the Pictish corpus (Henderson 1990: 3, 9, 13, 16, 22; Henderson & Henderson 2004: 140). The Applecross fragments rival them in their virtuosity, demonstrating that the Applecross monastery was not solely western-looking or provincial in its links and interests, but had significant ties to Pictland.

The application of a new theoretical approach, which the author developed for her doctoral thesis on Insular key pattern, has made this examination of the Applecross fragments possible (Thickpenny 2019). This new approach is artwork- and artist-centred and involves the thorough identification of key pattern's structural properties. These properties consist of the pattern's structural elements, or its physical structures or building blocks, and its structural principles, or the abstract, often mathematical, concepts that Insular artists used to manipulate the structural elements in order to fulfil specific design goals, invent new compositions, or even solve problems in the middle of the working process. This methodology requires empirical, formal analysis, but otherwise is relatively new to studies of Insular art and archaeology. It was first pioneered by Michael Brennan in his doctoral study of Insular artists' manipulation of the structural properties of interlace patterns (Brennan coined the term 'structural properties', but he did not conduct the same analysis on key pattern, which has a completely different structure from interlace) (Brennan 2011). As we shall see, this level of analysis was impossible in previous art-historical and archaeological studies of key pattern from the 19th to the 20th centuries. Significant methodological and conceptual flaws in these past studies inhibited scholars' understanding of this complex and subtle pattern. In contrast, the author's new approach to key pattern makes it possible to pinpoint Insular artists' own understanding of and conventions for this type of ornament, as well as the artistic habits of a single individual or workshop.

The artistic evidence from Applecross also harmonises with other archaeological evidence for a Pictish presence in the west, as well as with written records of political links between Wester Ross and Pictland. While Insular specialists have previously commented on general stylistic similarities between the stone monuments at Applecross, Rosemarkie and Nigg, and cited such archaeological and political connections between east and west in order to explain these similarities, this article presents the first concrete evidence, at the level of ornament structure, for links between multiple artworks across these three sites. The carved key patterns on the Applecross cross slab, the Nigg cross slab and most likely also a stone panel from Rosemarkie (discussed further below) all demonstrate a concerted and consistent employment of several specific strategies for handling the key pattern's repeating, spiralshaped units and negative (carved-out) lines and spaces. As these traits appear so consistently in combination, they strongly suggest that the Applecross and Nigg cross slabs - and likely also the Rosemarkie stone panel - were the unique work of a single, virtuoso Pictish hand or stone-carving team.

APPLECROSS: THE SITE AND PREVIOUSLY DISCOVERED FRAGMENTS

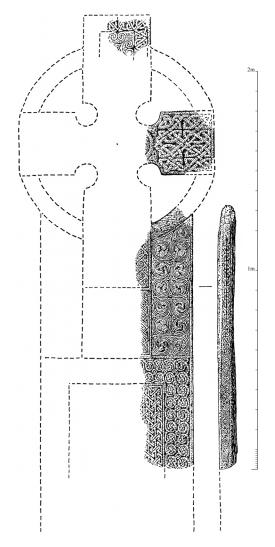
The early ecclesiastical centre at Applecross was founded in AD 673 by Máel Ruba, an Irish monk who had ties to the monastery of Bangor (Mac

Lean 1997: 173; Fisher 2001: 87; Fraser 2009: 252; Clancy et al (b)). Little else is known about Máel Ruba's life and work in northwestern Scotland, other than that he died in AD 722 (Mac Lean 1997: 173; Fraser 2009: 252-3). Early medieval written sources mention two more abbots of Applecross in AD 737 and again in 802 (Mac Lean 1997: 176). Although Applecross disappears thereafter from surviving early medieval written records, its ongoing importance is attested to by the fact that Máel Ruba is commemorated in numerous place names throughout western mainland Scotland and the Hebrides, as well as in five more locations in eastern Scotland (one as far as Crail, Fife) (Fisher 2001: 87; Clancy et al (b)). Applecross itself later became a parish church, and in 1256 and again in 1515 the church was noted as belonging to the cathedral of Ross (Close-Brooks 1995: 125; Clancy et al (a)). The current church building at the site dates to 1817 (NG 71355 45838; Canmore ID 11740) (Clancy et al (a)). In addition to the 19th-century church, a ruined 15th-century chapel or burialaisle survives in the east end of the graveyard (Canmore ID 11736) (Close-Brooks 1995: 125; Fisher 2001: 87). In the 19th century, a mound to the south of the chapel was presumed to be Máel Ruba's grave, and a later gravedigger, K MacRae, informed a surveyor that in 1934 he had discovered a long cist containing human bones and a metal object underneath the traces of an earlier building in this same area, which he believed to be the saint's burial place (Fisher 2001: 87; HES (a); HES (c)). Any other potential early medieval landscape evidence surrounding the churchyard was obscured by afforestation in the 1960s (Fisher 2001: 2, 87).

It is Applecross's collection of early medieval stone sculpture that most clearly reflects its former power and significance. Fisher (2001: 87–90) catalogued and described the sculptures that had been previously discovered at the site. The information he provided is summarised here, with his catalogue numbers. Applecross 1, the right side of a broken cross slab, at one time was built into the wall of the 15th-century chapel, and moved into a display case in the modern church in the 20th century (Close-Brooks 1995: 25). This cross slab fragment is 1.33m in height, 0.31m in width, ranges from 55mm to 95mm thick and is carved from reddish Torridonian sandstone (Fisher 2001: 88). The face and narrow side are decorated with a variety of relief-carved ornament: key pattern, interlace and curvilinear spirals, the latter with some zoomorphic embellishments. Applecross 2 was also carved from red Torridonian sandstone and is decorated entirely with relief-carved interlace. It is the end of a cross-arm, complete with a fragmentary curved edge-moulding on its left end, which once demarcated the centre of a cross-head. It measures $0.36m \times 0.32m$ and ranges from 35mm to 100mm thick (the narrowest measurement may be the result of a rebate carved into the back of the stone, which was likely added later). The third fragment, Applecross 3, is also carved from red Torridonian sandstone and is decorated with a frame of relief-carved interlace around a rectangular field of abstract curvilinear spirals. It measures $0.24 \text{m} \times 0.21 \text{m}$ and is 75mm thick.

Because of the similarity of their material and of the 'comparable edge-mouldings' around their fields of ornament, Fisher has argued that Applecross 1, 2 and 3 were all part of a single cross slab, with pierced armpits and a ringed head, which, when whole, would have stood at 2.2m tall or more (Fisher 2001: 88). Fisher located Applecross 3 as the top crossarm, Applecross 2 as the right cross-arm and Applecross 1 as part of the slab below them (see Illus 1). The gravedigger, MacRae, found Applecross 2 and 3 to the south of the chapel in the 1930s (Close-Brooks 1995: 125; Fisher 2001: 88). The carved patterns on all three fragments are of exceptional workmanship, with parallels to the Book of Kells, particularly in the zoomorphic spiral patterns; on this basis, Douglas Mac Lean dated Applecross 1 to the 8th or 9th centuries AD (Mac Lean 1997: 177-8).

Finally, a fourth sculpture survives at Applecross, which Fisher also catalogued and described along with the three fragments discussed above. Applecross 4, an unfinished cross slab of greyish Torridonian sandstone, stands at the graveyard gate (Close-Brooks 1995: 125). According to local tradition, it was taken from an earlier location along the nearby river



ILLUS 1 Applecross Fragments 1, 2 and 3, comprising a larger cross slab (Canmore SC 404552) (© Courtesy of Historic Environment Scotland (Ian G Scott))

and re-erected inside the gate in 1800 (HES (b)). Unlike the Applecross cross slab (Applecross 1, 2 and 3), Applecross 4 lacks relief-carved patterns and is decorated solely with an incised, ringed cross. It stands at 2.63m and it is unknown why the carver left it unfinished (Fisher 2001: 90). Because of its lack of decoration, Applecross 4 will not be discussed further or illustrated in this article.

THE NEWLY DISCOVERED FRAGMENTS AND THEIR IMPLICATIONS

In 2016 and 2017, additional sculpture fragments were discovered in the wall of the ruined postmedieval chapel, this time in an assemblage of 18 pieces (Illus 2 nos 5.1-5.16). Two of these fragments were removed from the chapel during conservation work in 2016, after which National Museums Scotland staff identified 14 more fragments taken from that structure (5.1-5.16) (Natasha Ferguson pers comm). During ongoing conservation work in 2017, the final two fragments from the assemblage (5.17-5.18)were found (Natasha Ferguson pers comm). At the time that the author wrote this article, the whereabouts of 5.17 and 5.18 were unknown. They have since been collected by the Treasure Trove Unit. The author was given access to photographs of these two fragments, which had been sent from Applecross to Treasure Trove and which were valuable resources for this study. However, the identity of the photographer was also unknown at the time the author wrote this publication, so the photographs of 5.17 and 5.18 are not included in this publication. Earlier 19th- and 20th-century records note the presence of stone fragments decorated with key pattern, interlace and spirals in the east wall of the chapel, however, by 1968 they were either lost or covered by harling (HES (a)). The author does not know whether the 18 newly discovered fragments from 2016 and 2017 are the same as those lost fragments recorded earlier or are a separate group. Whatever the case, it was immediately clear that Applecross 5.1-5.18 belonged to a larger early medieval sculpture that was smashed apart and scavenged for building material sometime in the later medieval or post-medieval period.

The colours of the new fragments range from red to grey. Many are discoloured by later masonry stains, in white or greyish streaks and

ILLUS 2 Sixteen of the 18 newly discovered Applecross fragments (Applecross 5.1–5.16). Scale for 5.16 is approximate (© Cynthia Thickpenny)



5.1







5.3



5.5









5.14 (left) and 5.9 (right)



5.10





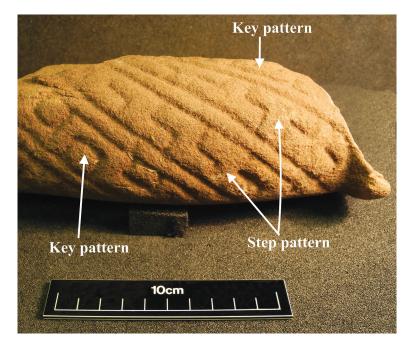




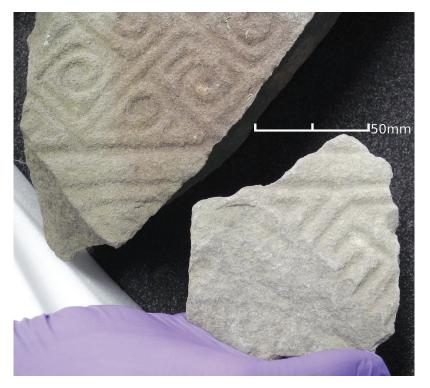
5.13







ILLUS 3 Applecross 5.1. Two adjacent rows of step pattern, flanked on either side by a single row of key pattern with pellets (© Cynthia Thickpenny)



ILLUS 4 Detail of shared moulded border on two fragments (5.3 and 5.16). Scale is approximate (© Cynthia Thickpenny)

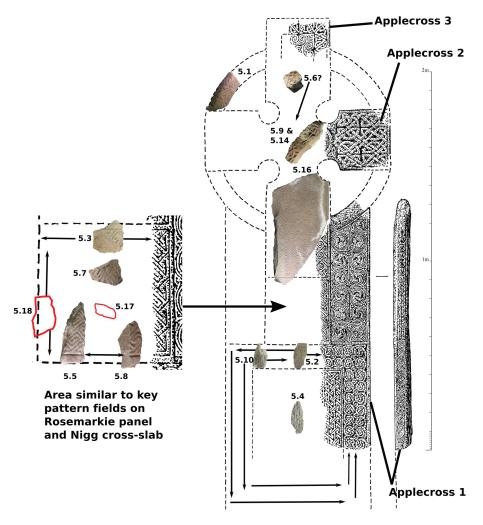
blotches (see Illus 2 no. 5.16). It is difficult to gain exact measurements of the fragments' dimensions because of their irregular, shattered edges. However, most are small (with the notable exception of 5.16), with maximum approximate dimensions no greater than 215mm long and 90mm wide (see Table 1). All but one of the fragments are decorated with relief-carved, geometric ornament, including interlace, zoomorphic pattern and key and step patterns. This ornament is also of exceptional workmanship, and all but two of the fragments contain ornament that matches the structure of the surviving key patterns and interlace on the Applecross cross slab. Eight of the fragments have key pattern only, including 5.17–5.18 (Illus 2 nos 5.3-5.5, 5.7-5.8, 5.16). Another rounded fragment, shaped like a truncated torus, is carved with two rows of simple key pattern embellished with pellets and two rows of step pattern, all running in a diagonal fashion across the curved surface of the stone (Illus 2 no. 5.1). The two key pattern rows are separated from each other by two adjacent rows of step pattern (Illus 3). Five more fragments have interlace only (Illus 2 nos 5.2, 5.6, 5.10, 5.14 and 5.9). On some fragments, sections of the moulded borders of the pattern fields remain intact, including 5.18 (Illus 2 nos 5.2-5.3, 5.5, 5.8, 5.12-5.14, 5.16; Illus 4). Finally, two more fragments (Illus 2 nos 5.11, 5.15) do not match any other known sculptures from Applecross in form, colour, or ornament.

Readers should note that in the photographs of the fragments in Illus 2 nos 5.1-5.16, it was sometimes necessary for the author to create shadows in order to reveal weathered ornament. However, care was taken to maintain the overall clarity of the images. In addition, due to access as well as health and safety concerns related to Fragment 5.16's heavy weight and location in storage, it was not possible for the author to rephotograph this fragment with staged lighting and a physical scale bar, unlike the other pieces from the assemblage. This publication therefore provides the author's initial research photographs for all illustrations containing Fragment 5.16 (Illus 2 no. 5.16; Illus 4; Illus 18). Although these research photographs were taken in a more informal mode, they do record clear and crisp images of the fragment's ornament. Finally, the author used physical scale bars whenever possible, however it was necessary to add scale bars digitally to some photographs when issues of access or availability prevented the use of physical scale bars.

THE LOCATION OF THE FRAGMENTS ON THE APPLECROSS CROSS SLAB

By analysing the physical components of the individual patterns, as well as any surviving moulded borders (the comparative widths of which the author matched to those on Applecross 1 during a visit to the Applecross Heritage Centre in June 2018), it is possible to determine the specific area of the Applecross cross slab to which each fragment belonged, and often their orientation within the slab as well (see Illus 5 for the location and orientation of each fragment on the slab). Key pattern, though rectilinear, is a design fundamentally based on the repetition of angular, spiral-shaped units, and these units and their structure provide useful clues for piecing the slab back together. It is also possible to locate the fragments with interlace by comparing the structure of their knots with those on the slab.

Twelve of the 18 fragments (5.2-5.5, 5.7-5.8, 5.10, 5.12–5.13, 5.16–5.18) belong to the missing left side of Applecross 1 (the portion of cross slab below the head). The largest fragment (5.16), with its curved outer edgemoulding and diagonal key pattern with singlestranded, curvilinear spiral units, comprises a large portion of the cross-shaft (Illus 5). Six smaller fragments come from a second field of key pattern located directly below this shaft, this time with two-stranded, rectilinear spirals (nos 5.3, 5.5, 5.7-5.8, 5.17-5.18). The author has identified Fragments 5.3, 5.5, 5.8 and 5.18 as occurring at the outer edges of this key pattern field because they contain sections of the field's moulded border. In addition, it is possible to pinpoint each of these fragments' general location to a specific edge of this border, as well as their orientation toward the top of the slab, by comparing the spin direction of each individual spiral-shaped unit of key pattern (clockwise or counter-clockwise) on each fragment with those



ILLUS 5 The location of the new fragments on the Applecross cross slab. Photographic inserts demonstrate both the location and orientation of the fragments within the fields of key pattern. Fragments 5.17 and 5.18 are indicated by red outlines. To scale (annotated, line drawing © Courtesy of Historic Environment Scotland (Ian G Scott))

surviving on Applecross 1 slab, as well as the widths of the surviving edge-mouldings.

First, the spiral-shaped units along the right side of this field spin in a clockwise direction, and those along the top and bottom sides of the field in a counter-clockwise direction. These spin directions are visible along the broken edge of Applecross 1. Although the left side of the field is lost, it is possible to confirm the spin direction of the outermost spiral units of the key pattern along that side. Enough of the composition survives to determine that the artist multiplied the spiral units using two-fold rotational symmetry (rotation twice at 90°), and as a result, the outermost units along the left border of the field must therefore spin in a clockwise direction. (The structural properties underpinning the relationship between rotation and spiral spin direction are fully outlined in the author's doctoral thesis. See Thickpenny 2019.) Second, the bottom edge-moulding of this field is significantly wider than that of the top edge of the field. Therefore, Fragments 5.5 and 5.8 must be located at the bottom edge of this key pattern field because of their thick edgemoulding and the counter-clockwise spin of their spiral units (Illus 5). Fragment 5.18 is located along the left edge of the field because its spirals spin in a clockwise direction (Illus 5). The units of Fragment 5.3 spin counter-clockwise, and its narrow edge-moulding matches that of the lower cross-arm (5.16). Therefore, 5.3 is located along the top edge of this key pattern field (cf Illus 4; Illus 5). Fragments 5.7 and 5.17 cannot be located or oriented as precisely within this key pattern field; they are too small and damaged, and lack edge-mouldings. However, a location somewhere near the top and bottom of the field can be suggested for 5.7 and 5.17 respectively, when the shape of their spiral units is compared with the fragments securely located at the field's outer border. Fragment 5.7 is located near the top of the key pattern field because the lines forming its unit are short, giving the spiral a compact structure similar to that of the near-complete spiral unit on Fragment 5.3 (Illus 5). Fragment 5.17, by contrast, is located near the bottom of the field because the lines forming its unit are long, giving the spiral an elongated structure that in turn matches those of 5.5 and 5.8. While the author was unable to view Fragments 5.17 and 5.18 in person, unlike the other pieces, it was possible to accurately assess their location on the Applecross slab by examining the structure of their spiral units in the unpublished photographs noted above.

Third, Fragment 5.1, with its torus-like shape and key and step patterns, was once part of the pierced cross-ring of the Applecross cross slab and may have been located just above the left cross-arm, directly to the right of the top arm, or immediately below the right arm (Illus 5). The only direct parallels for its key pattern in the European world occurred in Classical art, particularly in Greek vase painting. Historians of Classical art often refer to this key pattern as 'battlement meander', presumably because of its visual similarity to defensive turrets (eg see Coldstream 2008: 12). Its presence on the Applecross cross slab may reflect local knowledge of ancient Mediterranean art, or may be coincidental. Fragment 5.4 belonged to the large central field of diagonal key pattern on the bottom half of Applecross 1, of a type very common across the Insular world. It is also created by the repetition of spiral units with twofold rotational symmetry, though its structure differs in other ways from the key pattern field located directly above it (Illus 5). As noted above, Fragments 5.12 and 5.13 likely have key pattern, but are too fragmentary to identify with certainty.

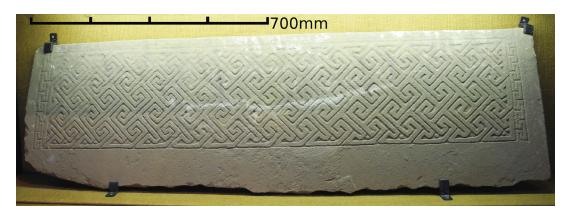
The interlace on Fragments 5.2 and 5.10 are easily located within the Applecross cross slab; their knots structurally match those filling the rectangular border at the bottom of Applecross 1 (Illus 5). Upon examining the fragments, Ian Scott discovered that Fragments 5.9 and 5.14 once fitted together, with 5.14 attached on the left of 5.9 (Ian Scott pers comm) (Illus 2 nos 5.14 and 5.9). He suggested that Fragments 5.6, 5.9 and 5.14, with looser interlace than that of 5.2 and 5.10, all may have been located somewhere within the head of the cross slab, near Applecross 2 and 3 (Scott pers comm) (Illus 5).

Finally, Scott also observed that the two final fragments (5.11 and 5.15) do not seem to match any surviving sculpture from Applecross in form. Fragment 5.11 contains a zoomorphic leg and foot, most likely from interlace or vinescroll ornament (Illus 2 no. 5.11). No such zoomorphic interlace or vinescroll survives on Applecross 1, 2 or 3. The depth of Fragment 5.11 (115mm) is also thicker than the depths of Applecross 1, 2 or 3. The unusual sloped edge and total lack of decoration on Fragment 5.15 is even more at odds with the Applecross slab. These details led Scott to propose that 5.11 and 5.15 might not have belonged to the Applecross cross slab and instead were part of currently lost monument(s) from the site (Scott pers comm).

THE ROSEMARKIE PANEL AND THE ACTIVE MANIPULATION OF NEGATIVE SPACE

In order to demonstrate that the same stone carver or team created the Applecross cross slab along with sculptures at the Pictish sites of Nigg and Rosemarkie, it is first necessary to discuss the structural properties of Insular key

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ILLUS 6 The Rosemarkie panel, Groam House Museum (ROMGH 1992.2). Scale is approximate (© Cynthia Thickpenny)

pattern that concern positive and negative space and their interrelationship. The sandstone panel from Rosemarkie (ROMGH 1992.2; NH 737 576; Canmore ID 259997) provides an excellent case study for understanding how early medieval artists handled these structural properties in their working processes (Illus 6). The case study is drawn from the author's doctoral thesis.

The sizeable collection of monumental sculptures at Rosemarkie, Easter Ross, indicates that it was the site of an important Pictish ecclesiastical centre (Groam House Museum 2013: 3). The carved stone panel in question has been dated art-historically to the 9th century and measures 1.54m long and 0.46m wide (Groam House Museum 2013: 8). Its purpose is unknown, though it may have been part of a composite sarcophagus or the interior architecture of a church (Henderson & Henderson 2004: 207). It is decorated with a large rectangular field of diagonal key pattern. The individual spirals within this key pattern have two strands, or two interlocked carved lines (Illus 7). Three of the panel's edges are dressed, while the fourth was left rough. This edge may have been concealed when the panel was mounted, though whether the panel was displayed in a horizontal position (as pictured in Illus 6) or vertically (with the rough edge set into a wall or other structure) is unknown.

Like all Insular key pattern compositions, the key pattern on the Rosemarkie panel contains the

structural elements (or physical building blocks) of negative and positive space. In all key patterns, the negative space or background is formed by a series of intersecting line segments. However many times these line segments intersect, they always ultimately terminate or dead-end in the middle of the pattern (with those at the edge of the field also terminating at their point of intersection with the outer border). When making key pattern, Insular artists always actively created only the negative space. In sculptures, including the Rosemarkie panel, sculptors carved the negative line segments out of the stone (Illus 6; Illus 7), while in manuscripts, illuminators would draw the same structures in dark ink (Bain 1994: ix). Insular artists also manipulated negative lines according to a specific structural principle: negative lines could be expanded or contracted to make them thicker or thinner, or transformed into a variety of shapes, such as the triangular expansions seen at the outer edges of the key pattern field on the Rosemarkie panel (Illus 6). This approach to negative space allowed Insular artists significant creative leeway to manipulate, adjust and embellish their key pattern compositions.

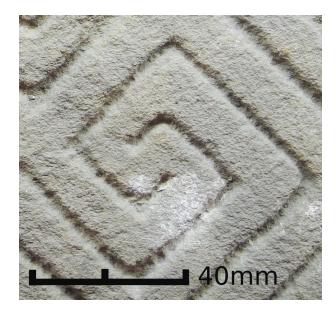
The structural element of positive space, or the foreground of a key pattern, is formed between the carved (or drawn) negative lines, as a passive by-product. In sculpture, the carver left it raised in relief after carving away the negative lines and shapes. (In manuscripts, the illuminators left the positive space on blank vellum after drawing the negative lines and shapes.) Insular artists upheld two strict structural principles regarding positive space in key pattern. First, unlike the discontinuous negative lines, artists expended considerable effort to prevent the positive space from terminating anywhere within the pattern field. The positive space therefore is continuous and can be followed with the eye throughout a key pattern composition ad infinitum. For this reason, modern scholars often refer to it as the 'path' (eg see Bain 1994: ix). Second, Insular

artists also expended great effort to maintain the positive path at an even, consistent width throughout a given key pattern composition. It was not allowed to thicken, contract or expand into shapes, unlike the negative space. These two principles of path continuity and evenness are found consistently in all key patterns across Insular art. Therefore, the same principle that permitted artists to thicken or manipulate the negative lines of key pattern into shapes also presented a significant challenge, because artists could only manipulate the negative lines of a key pattern if they also simultaneously maintained the structural integrity of its path.

Together, the negative lines and shapes and positive path form yet another crucial structural element in key pattern: the repeating, spiral-shaped unit (Illus 7). Spiral units of the same size repeat over and over to form a key pattern composition. The negative and positive space, as well as the spiral units, are just some of the many structural properties of key pattern.

However, it is the structural properties pertaining to positive and negative space which contain evidence that the same carver or team produced key patterns on the Rosemarkie panel and the Nigg and Applecross cross slabs.

At first, the large field of key pattern appears remarkably regular across the Rosemarkie panel, almost as though it were produced not by hand but by machine (Illus 6). However, close physical inspection of the monument revealed that the spiral units on the leftmost and rightmost sides of the key pattern field are markedly different in structure. The spirals on the left side of the field (Illus 7) contain four intersected negative line segments (and therefore four angles or 'turns' outward from the centre of the spiral). The author also measured the width of the negative line segments on this side of the field and found that they were all carved very thinly, often just a few millimetres in width. Both the thinness of the negative line segments and the high number of angles or 'turns' within the spiral units gives

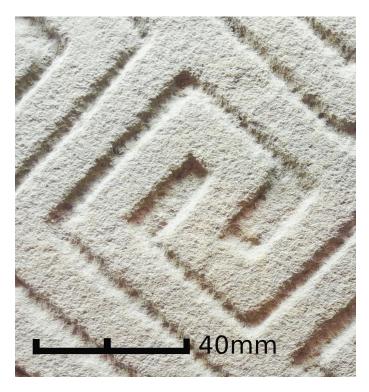


ILLUS 7 A spiral-shaped unit from the leftmost side of the Rosemarkie panel key pattern. Each series of intersected negative line segments within the spiral contains four angles. The negative lines are carved thinly. Scale is approximate (© Cynthia Thickpenny)

them a tight, compact appearance. In contrast, the spiral units on the right side of the field only contain three intersected negative lines (and therefore three angles or 'turns' from the centre of the spiral) (Illus 8). Furthermore, the carver made some of these line segments significantly wider than their equivalents on the left side of the field, in some cases up to 1cm wide. This gives the spirals on the right side of the field a more open, 'looser' appearance.

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The carver gradually altered the structure of the spiral units from 'tightly turned' to 'loose', starting from approximately one-third of the way from the left side of the key pattern field. At this point, they began to mix spiral units of both structures alongside each other. Halfway across the field, the artist then discontinued the 'tightly turned' spirals completely, and solely with the 'looser' spiral units found on the right side of the panel (Illus 8) and still maintained the structural integrity of the key pattern, they could not have done the reverse. If the artist had filled the entire composition with the 'tight' spirals found on the left side of the field (Illus 7), the extra negative line segments or 'turns' within each spiral would have made the positive path too narrow or even caused it to terminate



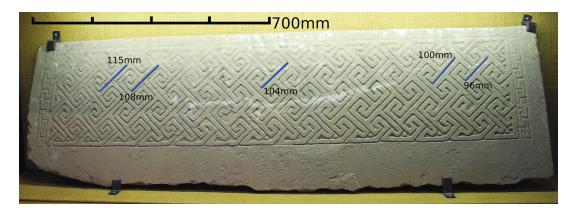
ILLUS 8 A spiral-shaped unit from the rightmost side of the Rosemarkie panel key pattern. Each series of intersected negative lines within the spiral contains three angles. Some negative lines are widened. Scale is approximate (© Cynthia Thickpenny)

carved the 'looser' spirals from there to the right edge of the stone. In addition, the carver also maintained the raised positive space or path at an even, consistent width (approximately 1cm) throughout the composition, despite the changes in structure and width they made to the negative lines.

Experimentation with scaled sketches of the Rosemarkie panel has revealed that while the Pictish carver could have filled the entire field at the centre of the spirals once the artist reached the right end of the field. In addition, the key pattern would have run off the bottom of the field, at approximately a third of the way from the left edge – a fate which Insular artists diligently avoided for every type of ornament they created.

The author measured each structure within this pattern field in person and discovered deeper structural reason а for this physical discrepancy between the spiral units. This discrepancy was structurally necessary to maintain the pattern throughout the field. The longest negative lines of the pattern, which connect the spiral units to each other, are longer on the left side of the field than those on the right side (Illus 9). It is these negative lines on the left side that would have caused the pattern to overrun the borders of the field. To prevent this, the carver appears to have gradually shortened these long negative

lines from the middle to the right side of the field. However, once these long negative lines were shortened slightly, it was no longer possible to continue carving spirals with four internal turns and narrow negative space without causing the path to terminate or become too narrow within these spirals. To keep the path even and continuous, the artist was forced to create spiral units with only three internal turns and to simultaneously widen some of their internal



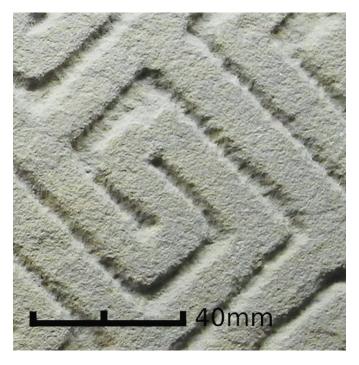
ILLUS 9 Measurements show the progressive shortening of the Rosemarkie key pattern's longest negative lines (blue). Scale is approximate (© Cynthia Thickpenny)

negative line segments. This relationship between these longest, connective negative lines and the internal structure of spiral units is itself a structural principle, which is fully explained in the author's doctoral thesis (Thickpenny 2019).

Some spiral units on the right half of the panel also contain longer internal negative line segments than those on the left side of the panel, in addition to fewer internal turns and widened negative space (cf Illus 7; Illus 10). These longer negative line segments give these particular spirals an elongated, sprawling appearance. The carver created these 'elongated' spiral units in a scattered fashion different from their otherwise deliberate and methodical structural alterations, although they did limit the elongations to the right side of the panel only. The author is still studying the underlying reason for this phenomenon. However, these 'elongated' spirals follow the same general trend as all the other units on the right half of the panel, by having a 'looser' appearance than those on the left side. It is also important to note that all the spiral units on the Rosemarkie

panel are roughly the same overall size, whether 'tight', 'loose' or both 'loose' and 'elongated', despite the variations in their internal structure.

It is likely that the Rosemarkie panel carver began working on the left side of the panel (as

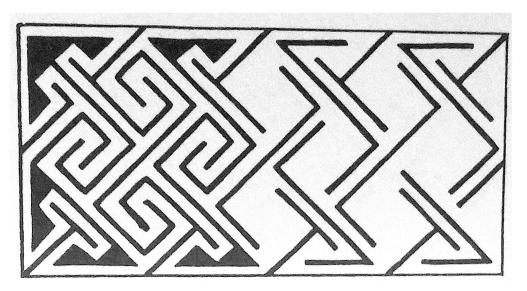


ILLUS 10 A spiral-shaped unit from the rightmost side of the Rosemarkie panel key pattern. The negative line segments are elongated. Scale is approximate (© Cynthia Thickpenny)

viewed in Illus 6) and realised approximately one-third of the way across the field that the initial plan was unworkable. At this point, the carver changed the structural programme in order to salvage the key pattern and thus the entire panel. If the artist instead planned this progressive structural change before carving, rather than making a mistake midway through the working process, it is possible it was done in order to create the optical illusion that the 'tighter' spirals on the left side of the panel were smaller than the 'looser' spirals on the right side. For example, if this panel were originally oriented in a vertical position when it was first displayed, the carver may have altered the spiral structures to create a sense of perspective. If the panel were oriented vertically and slightly above eye level, with the 'looser' spirals at the top, this might have helped the medieval viewer to visually register the entire pattern as being perfectly regular, with the spirals identical in structure and size (in the same way that Michelangelo enlarged David's head and hands so that they would appear proportionate when the statue was viewed from below). If the panel were oriented vertically, but with the 'looser' spirals at the bottom and the 'tighter' (and seemingly smaller) spirals at the top, this might have reflected the carver's attempt to produce the same effect that modern picture-framers do when they bottom-weight the matting of a photograph or painting – that is to make the bottom edge or area wider than the top of the frame - which actually creates an optical illusion of perfect evenness throughout the visual field when viewed at eye level (Archival Methods 2015). Whatever the Rosemarkie carver's reason for the structural shift from one side of the key pattern field to the other, this gradual alteration was a careful and deliberate programme.

These structural alterations from the left to right side of the panel are also so gradual and subtle that the progression is not immediately noticeable to the eye. The artist's careful maintenance of the evenness and continuity of the positive path, as well as consistency of overall spiral size despite the structural variations and widening of the negative space, all serve to enhance the impression of regularity throughout the pattern. This total creative control, either in the planning or working processes – or both – showcases the carver's skill and fluency with key pattern. A truly virtuoso master carver or team of artisans created the Rosemarkie panel.

Up to this point, methodological limitations in previous studies of Insular key pattern have prevented specialists from identifying evidence at this level of detail. Iain Bain, cited above, was one of the few to discuss how Insular artists created negative space in key pattern, but he did not explore the wider creative implications of their approach to it. In addition, in some earlier theories about key pattern structure, such alterations within a single field of ornament as on the Rosemarkie panel would have been seen as irreconcilable contradictions. In this case, it is only necessary to discuss John Romilly Allen's archaeological classification of key pattern in The Early Christian Monuments of Scotland (1903), because this seminal work impacted all studies of Insular key pattern published thereafter. Allen used typographic reproductions to catalogue and analyse individual key pattern compositions in the abstract, rather than focusing on individual artworks directly. Within these reproductions, Allen physically straightened, regularised, and idealised the lines and shapes. He did not record the panel from Rosemarkie, but in his key pattern no. 958, which is very similar in structure to that of Rosemarkie, he recorded no such fluctuations in the width of the negative lines (Allen & Anderson 1903, vol I, part II: 348, no. 958) (Illus 11). His pattern instead looks as if it had been made 'perfect' by machine, thereby erasing the subtle, hand-made alterations to key pattern structures as found on the Rosemarkie panel. Furthermore, Allen separated his key pattern types in part by identifying the specific triangular or rectangular shapes in their negative space (cf Allen & Anderson 1903, vol I, part II: 348, nos 959, 960). These divisions were stricter than the medieval reality and Allen would not have been able to reconcile the fact that the negative lines in the Rosemarkie panel's spiral units take two different forms within the same key pattern. This rigid modern approach elides the reality of medieval artists' flexibility and



ILLUS 11 John Romilly Allen's key pattern template (Allen & Anderson 1903, vol 1, part II: 348, no. 958)

creative agency and therefore the evidence for their own conception of key pattern as well as their working processes.

KEY PATTERNS ON THE APPLECROSS AND NIGG CROSS SLABS

The fragmented key pattern field directly below the lower cross-arm on the Applecross cross slab (Illus 5) betrays Applecross's historical connection to the Pictish ecclesiastical site of Nigg and likely also to Rosemarkie. Here the carver(s) manipulated the negative lines and spiral units in ways analogous both to the key pattern in the Rosemarkie panel, as well as another field of key pattern located in the same position on the Nigg cross slab, directly below the lower cross-arm (Illus 12a-b). All three diagonal patterns are ultimately built upon the two-fold rotation of rows of spiral units, and the individual units themselves are each formed by two strands (ie two interlocking carved negative lines). More importantly than these basic structural similarities, all three sculptures share a constellation of deeper, unusual traits in the treatment of their negative lines and spiral structures. Namely, the carver(s) lengthened and widened negative lines to give the illusion that the key pattern spirals progressed from smaller/compact to larger/looser across each field. Because both the Applecross and Nigg key patterns are situated within cross slabs, we can confirm that these alterations were intended to progress from the top edges of the fields to the bottom edges. These shared traits provide concrete evidence that all three sculptures were carved by a single artist, or by a team that shared distinctive habits in the manipulation of key pattern.

Further linking the Applecross and Nigg key patterns specifically is the fact that their longest negative lines each connect two spiral units to form S-spirals (on the Rosemarkie panel these connections instead form C-spirals). For this reason, the deep structural similarities between the Applecross key pattern field and the Nigg cross slab – which, like the Applecross cross slab, may also be dated to the 8th or 9th century due to similarities in its layout and ornament to carpet pages from the Book of Kells (Henderson 1982: 85–90, 98) – are doubly strong.

The Applecross carver significantly widened the negative line segments in the spiral units located along the top edge of the key pattern field. In contrast, they carved only very thin negative



ILLUS 12 (a) The Nigg cross slab and key pattern (below the cross-shaft, indicated in red). Scale is approximate (© Cynthia Thickpenny). (b) Detail (© Cynthia Thickpenny)

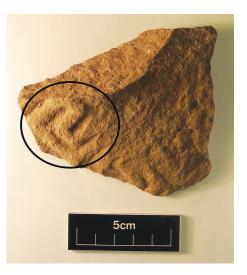
lines at the bottom edge of the same field. These differences can be seen by comparing the newly discovered Fragments 5.3 and 5.7 (top) with 5.5 and 5.8 (bottom) (cf Illus 13 and 14, versus Illus 2 nos 5.8 and 15). Because this panel only survives in fragments, it is not possible to determine what necessitated these alterations to negative line width. However, their progression across the key pattern field echoes that of the Rosemarkie panel. Damage and weathering make it unclear whether the individual spiral units on the Nigg panel were manipulated in the same fashion, although some hints suggest that the artist did widen the negative lines within the spirals as they progressed down the field (albeit in the opposite direction of the widening on the Applecross key pattern, which occurred at the top of that field) (cf Illus 12b, Illus 16 and Illus 17).

However, neither fragmentation nor damage can hide the fact that on both the Applecross and Nigg key patterns the carver(s) shortened and lengthened the negative line segments within the spiral units, to lend them a 'tight' or compact appearance at one end of each field and a contrasting elongated or 'loose' appearance at the other end, as also seen on the Rosemarkie

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ILLUS 13 Shorter negative lines and wider negative space in a spiral at the top edge of the Applecross key pattern field. Fragment 5.3 (© Cynthia Thickpenny)

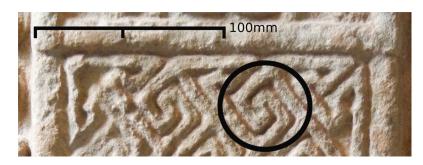


ILLUS 14 Wider negative space in a spiral near the top of the Applecross key pattern field. Fragment 5.7 (© Cynthia Thickpenny)

panel (Illus 10). Spirals along the top edges of the Applecross and Nigg key pattern fields possess comparatively short negative lines and thus a tighter, more compact appearance. On the fragments along the bottom edge of the Applecross key pattern field, these lines are lengthened, giving spirals an elongated, strung-out appearance. It is unknown when this lengthening begins within the field, as so much of it is now lost. The same progression occurs on the Nigg cross slab and, because the entire field survives, it is clear that the elongation of the



ILLUS 15 Narrow and elongated negative lines in a spiral at the bottom edge of the Applecross key pattern field. Fragment 5.5 (© Cynthia Thickpenny)

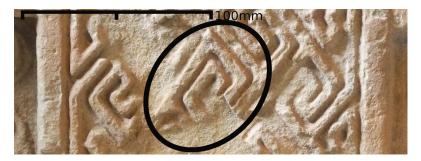


ILLUS 16 Shorter negative lines in a spiral at the top edge of the Nigg key pattern field. Scale is approximate (© Cynthia Thickpenny)

spirals' lines commences approximately halfway down the field - as it also does on the Rosemarkie panel (for Applecross, cf Illus 13 and 14 with Illus 15 and 2 no. 5.8; for Nigg compare Illus 16 and 17). The only previous scholar to observe the gradual spiral elongation on Nigg was George Bain, but he made no connection to Applecross and attempted no explanation for why the artist altered the spirals in this way (Bain 1951: 77, plate 6). It is unlikely that the carver(s) altered their spiral units in response to an initial mistake in their planning or working processes, given that it appears in an identical manner on both Applecross and Nigg. It is more likely that the effect was deliberate. Again, one might speculate that the carver(s) intended to bottom-weight both key patterns.

These two key pattern fields from Nigg and Applecross do lack one detail found on the Rosemarkie panel: the use of spirals with four negative line segments (and thus four angles or 'turns' from the centre of each spiral). The Nigg and Applecross key pattern fields only contain spirals with three negative line segments (and thus three angles or 'turns'), like those found exclusively on the right half of the Rosemarkie panel. In fact, the partial addition of extra line segments or 'turns' within only some spiral units in a single key pattern field is unusual. The author is not aware of this occurring in any other sculptures in the Insular world besides the Rosemarkie panel.

On the Applecross cross slab, the carver manipulated the negative lines of another key pattern field in an equally unusual manner. This key pattern has single-stranded rather than twostranded spirals, and is found in the lower crossarm of the Applecross slab (Fragment 5.16) (Illus 18). During the carving process, the positive (raised) path in some spiral-shaped units had become noticeably wider than in others within this field. Further research is needed to identify

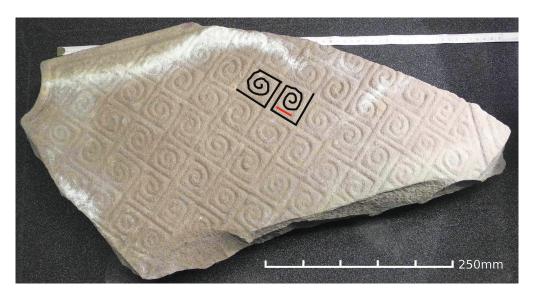


ILLUS 17 Elongated negative lines in a spiral halfway down the Nigg key pattern field. Scale is approximate (© Cynthia Thickpenny)

why this structural discrepancy occurred, but the Applecross artist restored the principle of path evenness by carving additional, unusual, short negative lines, or ticks, into units where the path had become too wide (Illus 18). This physical alteration likewise is found nowhere else in Insular key pattern in any medium – including the Rosemarkie panel. Therefore, while these specific strategies for physically altering negative space differ between the Applecross cross-arm and the Rosemarkie panel, they do share an utterly unique and experimental spirit or approach to the manipulation of space in key pattern.

The progressive widening and elongation of negative lines within spiral units, as seen on the Rosemarkie panel and Applecross and Nigg cross slabs, is itself also extremely uncommon on other Insular sculptures. While spiral units do contain negative lines of varying widths on other Pictish sculptures, such as the Rossie Priory cross slab, which the author examined personally, these widened negative lines were scattered randomly across the pattern fields in question and so are not limited to the innermost negative line segments within individual spiral units only. The artists simply widened whichever negative lines were necessary for the maintenance of path evenness, instead of following an incremental, progressive programme like those at Rosemarkie, Nigg and Applecross. Furthermore, such manipulations of negative space are even rarer on key patterns from northern Britain that share Rosemarkie, Nigg and Applecross's diagonal structure with two-fold rotation and two-stranded spirals. These include the Ulbster cross slab, Burghead 9 and 12, the Aberlemno roadside cross slab, the Ardchattan cross, Kinneddar/Drainie 7, 12, 14 and 18, Lindisfarne 5 and Norham 5 (Allen & Anderson 1903, vol II, part III: 33, 140, fig 30 & 142; Cramp 1984b: plates 191, 206, nos 1055-9, 1174-5; Fisher 2001: 120; Fraser 2008: 48; HES (d); HES (e); HES (f); HES (g); HES (h)). None of the sculptures from this list contain gradual, progressive alterations of negative space.

The only other sculpture in northern Britain with key pattern that shares the same basic diagonal, rotated, two-stranded structure and possesses a progressive widening and lengthening of negative lines is the Abercorn 2 cross-shaft (NT 08147 79077; Canmore ID 251978). In a field near the top of Abercorn 2, one spiral unit at the top edge of the field has shortened negative



ILLUS 18 Applecross 5.16. Two adjacent spiral-shaped units with negative lines annotated in black. The carver added an extra negative line to one of the units (indicated in red). Scale is approximate (© Cynthia Thickpenny)

lines, while all the units below it have elongated negative lines. Only one spiral unit, in the bottom row of the pattern, has widened negative space. Though these alterations in spiral structure and negative space are similar to the Rosemarkie, Nigg and Applecross key patterns, Abercorn is located far to the south in West Lothian, making this cross-shaft an outlier.

The intense focus at Rosemarkie, Nigg and Applecross on the creation of progressions in negative line width and length, along with the two additional and highly unique methods of manipulating negative space on the Rosemarkie panel and Applecross cross-arm, are indicative of a single carver's or team's artistic habits and creative mindset. This evidence is further cemented by the artist's or artists' preference for diagonal patterns with two-stranded spirals and two-fold rotation across all three monuments, as well as these patterns' identical location below the lower cross-arm on the Applecross and Nigg cross slabs - both minor similarities which on their own would otherwise not be enough to identify a connection between the three sites. When viewed individually, each manipulation of the negative lines and spiral structures on the Rosemarkie panel and the Nigg and Applecross cross slabs also might not be enough to arouse suspicion. However, these traits occur together on these monuments en masse with a unique, unusual repetition and consistency indicative of an individual artist's personal habits and deliberate programmes, much like a scribal hand in manuscripts. If these three monuments were not carved by a single person, then they were created by a team of craftspeople all trained in the same strategies for manipulating key pattern's deep physical structure.

PREVIOUS SCHOLARSHIP ON STONE-CARVING 'SCHOOLS' IN THE INSULAR WORLD

The panel from Rosemarkie was not specifically discussed by Douglas Mac Lean or Ian Fisher in their overviews of sculpture from Applecross (Mac Lean 1997; Fisher 2001). John Romilly Allen himself was not yet aware of this sculpture

in his 1903 Early Christian Monuments of Scotland. However, both Mac Lean and Fisher briefly noted connections between the key patterns on the Applecross cross slab, the Nigg cross slab and other sculptures at Rosemarkie in a very general way, and on this basis suggested that Applecross had artistic links with Rosemarkie, Nigg and other sites in Easter Ross, and with Pictland more widely (Mac Lean 1997: 177, 181; Fisher 2001: 11, 14, 23, 88). For example, Fisher misidentified the two-stranded key pattern in the field below the cross-arm on the Applecross cross slab as Allen's no. 963, which actually contained four-stranded (rather than two-stranded) spirals (Fisher 2001: 88). He then briefly concluded that 'several' key patterns 'recur' at Applecross, Nigg, Rosemarkie and Tarbat in Easter Ross and Farr in Sutherland (Fisher 2001: 88). However, his observation about the Applecross key pattern was not only structurally incorrect, but also not specific enough to support any suggestion that the three sites traded ideas in the early medieval period. As we have seen, other sculptures, which contain key patterns with the same basic structure as that on the Applecross slab, are found across northern Britain but are otherwise unrelated. It is therefore best not to support arguments for links between multiple archaeological sites on this basis, nor should scholars rely on Allen, whose renderings of key patterns - as we have seen - are often unfaithful to the original medieval works. Neither Mac Lean nor Fisher analysed the key patterns on the Applecross cross slab at a level of detail sufficient for drawing firm connections between the site and Pictish Easter Ross.

Previous scholars similarly have compared other types of Insular pattern (interlace, vine scroll, etc) as evidence for the existence of 'schools of carving' in other parts of Britain (Cramp 1984a: 23–33). For example, in the first volume of *The Corpus of Anglo-Saxon Stone Sculpture*, Rosemary Cramp identified the origins and chronological developments of various 'schools of carving' in Anglo-Saxon Northumbria, based on general stylistic observations about sculptural ornament in this region (Cramp 1984a: 23–33). Cramp used three methods to identify links between ecclesiastical sites. First, she identified specific pattern types

within classifications that were common at an originating site, such as interlace 'pattern F', which was found at Monkwearmouth but rare elsewhere (Cramp 1984a: 23–4). The occurrence of this interlace pattern at another centre outside Monkwearmouth might well indicate a link between the two sites, however, as we have seen with key pattern, it is the artistic handling of tiny details within a pattern that is diagnostic and not necessarily the pattern type itself. Second, Cramp noted stylistic 'parallels' in patterns on different sites, such as the plant-scrolls at Escomb and Jarrow. She did not discuss whether these parallels were simply visual and impressionistic, or rooted in deep, subtle structural details (Cramp 1984a: 26). Third, Cramp also argued that modern specialists can differentiate between artistic hands by comparing the level of competence in the 'layout and cutting' of patterns on Anglo-Saxon sculpture (Cramp 1984a: 27, 38). She did not, however, outline her criteria for judging competence or which details of the patterns revealed artists' skills or lack thereof. In the author's opinion, it is best not to judge the comparative qualities of early medieval sculptures, as we do not know enough about Insular artists' own aesthetic values and what they deemed competent or incompetent. Previous formal analyses of pattern, therefore, have not identified the deep, subtle structural details that most clearly differentiate the work of different artists.

This article is therefore most similar in approach, though not in method, to the work of Laila Kitzler Åhfeldt on the medieval picture stones of Gotland. Kitzler Åhfeldt scanned the incised faces of the picture stones with a 3D scanner, and from these scans created digital models that recorded the stones' surfaces and 'cutting lines' (Kitzler Åhfeldt 2012: 183). These scans provided cross-sections of the incisions, each containing the 'sequence of impacts' that were formed as the carver's chisel proceeded across the stone (Kitzler Åhfeldt 2012: 187). At this point, Kitzler Åhfeldt had not yet developed her research to identify single artists or workshops (ie a group of colleagues who trained and carved together), but she could identify differences in wider regional habits among Gotlandish carvers (Kitzler Åhfeldt 2012: 187). However, she acknowledged the potential for her research to be developed further in this area. Although Kitzler Åhfeldt argued that her method of scanning cannot be applied to relief-carvings (Kitzler Åhfeldt 2012: 193), Megan Kasten of the University of Glasgow has developed a similar method of scanning grooves in more extensive, deeper styles of carving closer to relief on monuments from Govan, Scotland (Kasten forthcoming). Nonetheless, this current study of key pattern addresses only what can be seen with the naked eye. However, it shares with Kitzler Åhfeldt's approach a focus on very small-scale aspects of carved ornament which were minute, personal and - once the artist(s) were trained potentially automatic. In Insular key pattern, these micro-details are the artistic fingerprints of an individual artist or team trained in the same approach.

ARCHAEOLOGICAL AND HISTORICAL EVIDENCE FOR A PICTISH PRESENCE IN WESTER ROSS

The links between Applecross, Rosemarkie and Nigg harmonise with other archaeological and written evidence for a Pictish presence in the region of Wester Ross and Skye. Stones bearing incised Pictish symbols were found at Gairloch and Poolewe in Wester Ross, at Tote, Fiscavaig, and Tobar na Maor, in Skye, as well as on Raasay (Fraser 2008: 90, 94, nos 122, 125, 131-4). Both Douglas Mac Lean and James Fraser have discussed medieval textual evidence that records the movement of the Pictish kindred of Cano, son of Gartnait from Skye to Ireland in the mid-7th century (Mac Lean 1997: 174-5; Fraser 2009: 204-5). While their movements predated the sculptures at Applecross, Nigg and Rosemarkie by approximately a century or more, they demonstrate that it was easily possible for all three sites to communicate and share personnel in the 8th or 9th centuries. Lastly, as Isabel and George Henderson have observed, the form of the cross slab itself was most common in Pictland and distinctively Pictish, while the contemporary Irish and Anglo-Saxons favoured free-standing

	5.1-5.18
	Fragments !
TABLE 1	Applecross]

Fragment no.	Dimensions (mm)	Condition of ornament	Ornament type	Location on Applecross cross slab
5.1	$215 \times 75 \mathrm{mm}$	Lightly worn	step pattern; key pattern	Cross-head ring
5.2	$140 \times 65 \mathrm{mm}$	Lightly worn, contains edge-moulding	interlace	Interlace frame surrounding key pattern field in bottom section of slab
5.3	99 × 90mm	Half of face shattered, surviving area very worn but still clear, contains edge-moulding	key pattern	Top edge of the key pattern field located directly below lower cross- arm
5.4	167×56 mm	Lightly worn	key pattern	Key pattern field in bottom section of slab
5.5	170 × 63mm	Lightly worn, contains edge-moulding	key pattern	Bottom edge of the key pattern field located directly below lower cross-arm
5.6	77×54 mm	Very worn but still clear, stone stained	interlace	Central circular field of cross-head? (Matches 5.14)
5.7	$104 \times 65 \text{mm}$	Majority of face shattered, surviving area very worn but still clear	key pattern	Top area (away from edge-moulding) of the key pattern field located directly below lower cross-arm
5.8	113 × 29mm	Lightly worn, contains edge-moulding	key pattern	Bottom edge of the key pattern field located directly below lower cross-arm
5.9	113×44 mm	Very worn but still clear	interlace	Central circular field of cross-head? (Matches 5.14)
5.10	141 × 65mm	Lightly worn	interlace	Interlace frame surrounding key pattern field in bottom section of slab
5.11	133×32 mm	Very worn but still clear	zoomorphic	Separate monument
5.12	137 × 18mm	Badly worn and unclear, contains edge- moulding that divides two pattern fields	key pattern?	Uncertain area of Applecross cross slab

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TABLE 1 Applecross Fragments 5.1–5.18 (cont)

ent Location on Applecross cross slab	tern? Uncertain area of Applecross cross slab	e Central circular field of cross-head? (Curved edge-moulding matches Applecross 2)	Separate monument	tern Lower cross-arm. Small section contains bottom edge-moulding of cross-arm and a portion of the key pattern field located directly below lower cross-arm	tern Bottom area (away from edge-moulding) of the key pattern field located directly below lower cross-arm *NB: The author was unable to view this fragment in person, but was able to deduce its approximate measurements by comparing its spiral-shaped key pattern unit with the size of key pattern units from other fragments located in the same area of the cross slab.	tern Left edge of the key pattern field located directly below lower cross- arm *NB: The author was unable to view this fragment in person, but was able to deduce its approximate measurements by comparing its spiral-shaped key pattern unit with the size of key pattern units from other fragments located in the same area of the cross slab.
Ornament type	key pattern?	interlace	none	key pattern	key pattern	key pattern
Condition of ornament	Badly worn and unclear, contains edge- moulding that divides two fields	Very worn but still clear, stone stained, contains edge-moulding	Surface shattered, with surviving curved edge	Lightly worn, stone stained, contains two edge-mouldings	Very worn but still clear	Lightly worn
Dimensions (mm)	150×27 mm	122 × 48mm	122×80 mm	500 × 290mm	73 × 43mm	88 × 58mm
Fragment no.	5.13	5.14	5.15	5.16	5.17	5.18

*NB: Dimensions are approximate because the fragments have irregular, shattered edges. Maximum lengths and widths are rounded to the nearest millimeter.

All fragments would have originally varied in depth between approximately 35–100mm (the total range of depths for Applecross 1, 2 and 3, which comprised the Applecross cross slab (HES (c)). Because of shattering and flaking, however, their current depths vary and so are not listed here. Fragments 5.11 and 5.15 likely belonged to separate monument(s). The depth of 5.11 is discussed separately in the text.

crosses (Henderson & Henderson 2004: 174–5). One should also add Iona, to the south-west of Applecross, to this list of sites and regions that preferred free-standing crosses. The form of the Applecross cross slab, as well as its key patterns, therefore pulls it into the Pictish orbit of Easter Ross.

CONCLUSION

The early medieval monastery at Applecross was a major institution in the 8th and 9th centuries with connections that ranged from Ireland and western Scotland to Pictland in the east. The Applecross cross slab, now reconstructed even further with the discovery of new fragments, should be widely recognised as one of Britain's art-historical treasures, with dense frames of complex abstract ornament that more than one scholar has rightly compared to the carpet pages of manuscripts such as the Book of Kells. In addition, the potential existence of another, unidentified sculpture from the site, surviving only in the newly discovered Fragments 5.11 and 5.15, further highlights Applecross's important status in the Insular period.

When combined, the shared, overarching strategies for manipulating spiral shapes and negative lines in the key patterns on the Applecross cross slab, Nigg cross slab and Rosemarkie panel - in order to create visual effects and/or solve structural problems - are strikingly unique, deliberate, planned and thus reflective of a specific artistic habit. When all of these traits are considered together, there are no other comparable carved key pattern compositions elsewhere in northern Britain. This indicates that all three ecclesiastical sites shared a master carver or team of skilled personnel whose careers spanned both Easter and Wester Ross and who created some of the greatest surviving arthistorical monuments in Britain.

ACKNOWLEDGEMENTS

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Inchinnan 5: the discovery and reconstruction of an early medieval carved stone

Megan Kasten¹

ABSTRACT

The site of All Hallows Church in Inchinnan, Renfrewshire, had its foundations in the early medieval period, an interpretation supported by the identification of four carved stones from the site that date between the 9th and 11th centuries AD. Thanks to a recent community project '597 AD St Conval to All Hallows: 1420 Years and Counting', led by Heather James of Calluna Archaeology and the members of the Inchinnan Historical Interest Group with Spectrum Heritage, a fifth carved stone has been discovered. Inspection of the photogrammetric three-dimensional models and the Reflectance Transformation Imaging (RTI) files of the late medieval recumbent monuments at the site, produced by Spectrum Heritage, revealed that one worn specimen was originally an early medieval recumbent cross slab conforming to the 'Govan School' of carving. After identifying the remnants of carving and applying a novel digital analysis technique, it was possible to recover and identify many of the worn decorative motifs from Inchinnan 5. This reconstruction allows for Inchinnan 5 to be compared with other stones from the Govan School, especially those found at Govan and St Blane's, Bute.

INTRODUCTION

As a result of the archaeological community project at the site of All Hallows Church in Inchinnan, Renfrewshire (Canmore ID 43063), in May 2017, a previously unrecorded early medieval carved stone was discovered. The stone is severely worn and was displayed among the later medieval 'Templar Stones' due to its subsequent reuse, but its earlier origins were identified after photogrammetry revealed several features that indicated the stone was carved in the style of the Govan School. This article begins with a brief discussion of Inchinnan's early medieval origins, its carved stones and a description of the traits they share with the Govan School. This is followed by an overview of the community project that led to the stone's discovery. An explanation of the digital imaging techniques applied to this stone and a discussion of the methodology used to recover worn carved details are given. The reconstruction of Inchinnan 5 allows for it to be compared with similar material from the Govan School, especially Govan and St Blane's, Bute. From this analysis, it is clear that photogrammetry and Reflectance Transformation Imaging (RTI) have significant research applications, especially in the study of worn carved stone.

BACKGROUND

The site of All Hallows Church in Inchinnan, Renfrewshire, had its foundations in the early medieval period. It is reputed to be the burial place of the early Christian saint, St Conval. While physical evidence for an early medieval church has not yet been found at the site, its collection of early medieval stones and a historical record of David I's gift of the church to the Knights Templar in 1153 strongly suggest the presence of one. At least three church buildings have been recorded at the site: the earliest was

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medieval in date and is recorded in an illustration kept in the current parish church; the medieval church was demolished and replaced in 1828 by the second church building, which is visible on the first OS map; the second church was demolished and replaced in 1904 by the most recent church building, which was designed by Rowand Anderson (James 2018: 6–10). When the most recent church building was demolished in 1965 for the extension of the runway at Glasgow Airport, the three early medieval stones and ten later medieval stones kept at All Hallows Church were moved to the new Inchinnan parish church (Radford 1967: 181; Márkus 2018: 32–3; James 2018: 3).

Inchinnan's early medieval phase has been associated with Govan, largely due to the similarities in the design of the carved stones from these sites (Radford 1967; Driscoll et al 2005). Three early medieval carved stones dating between the 9th and 11th centuries were originally recorded at Inchinnan (Stuart 1856,

vol 1: 38, pl LXXV-LXXVI; Allen & Anderson 1903, vol 2: 456-9) and have been most recently described by Anna Ritchie as a part of Canmore's 'Early Medieval Carved Stones Project' (2017). As indicated above, the Inchinnan stones belong to what is known as the 'Govan School', a term used to describe early medieval carved stones in Strathclyde that share several features, including the recumbent crossslab monument type, some of which exhibit angle-knobs, and median-incised interlace patterns (Bailey 1994: 113-14; Driscoll et al 2005: 141–2).

In this article, decorative motifs will be described using the pattern's closest likeness in Allen and Anderson's numbering system, though after their initial introduction these will be referred to by simplified colloquial terms that Allen used in his descriptions and have since been employed by art historians (Cramp 1984; Bailey 1994). While there are issues with Allen's pattern categories, as argued by both Michael Brennan (2011: 3–4) and Cynthia Thickpenny (2019: 106–7), it is useful to describe patterns in terms of a family or genus of pattern (Brennan 2011: 19).

In the Govan School, patterns such as plaits, Stafford knots (Allen & Anderson 1903, vol 1: 231–4, pattern no. 214) and free-rings (Allen & Anderson 1903, vol. 1: 222–4, pattern no. 574) are especially prevalent (Bailey 1994: 117). Three of the early medieval stones from Inchinnan are depicted below in Illus 1. Inchinnan 1 is a recumbent cross slab decorated with a plain cross and interlace patterns, including a Stafford knotrelated pattern (Allen & Anderson 1903, vol 1: 240–1, pattern no. 215). Inchinnan 2 is part of a cross shaft decorated with free-ring interlace and plait that has had one broad face shorn away. Inchinnan 3 is a recumbent monument that



ILLUS 1 Unaltered images of the three-dimensional models of Inchinnan 1, 2 and 3 created by Spectrum Heritage (2017) as part of this community project

exhibits prominent angle-knobs and is decorated with a plain cross, a multitude of beasts and simple knots and twists on five faces. Due to its ornate design and its prominent angle-knobs, this recumbent monument is often described as a shrine cover or sarcophagus lid (see Radford 1967: 182; Craig 1994: 77). A fourth fragment, Inchinnan 4, was discovered near the All Hallows site on the river bank in 2009; it is currently thought to have come from the top edge of a recumbent cross slab (Borland 2009).

In May 2017, an archaeological community project entitled '597 AD St Conval to All Hallows: 1420 Years and Counting' was led by Heather James of Calluna Archaeology and the members of the Inchinnan Historical Interest Group. The focus of the project was to determine whether early medieval deposits survived beneath or near the site of the All Hallows Church. The comprehensive programme aimed to engage volunteers and school groups with geophysical survey, archaeological excavation and the recording of both ancient and modern gravestones. The results of the project have been recently published by James (2018). Gilbert Márkus was commissioned to revisit Inchinnan's association with the cult of St Conval through the place-name, historical and hagiographical evidence (2018). Spectrum Heritage was contracted to introduce photogrammetry and RTI to the volunteers and to create three-dimensional models of the three early medieval carved stones and the ten medieval stones, which date broadly between the 12th and 17th centuries and are known colloquially as the 'Templar stones', which are all kept at the site of the new parish church. It is the digital imaging element of the project that has led to the discovery of a previously unidentified early medieval monument among the medieval 'Templar stones'.

DIGITAL IMAGING TECHNIQUES

Photogrammetry is a digital imaging technique that creates a three-dimensional model of an object through the strategic capture of many overlapping photographs taken from different positions around the monument. By including approximately 60% overlap between adjacent images, the software (in this case the software used by Spectrum Heritage was Agisoft Photoscan) identifies points and features that are shared between the photographs and calculates and records the geometry of the object in the form of a three-dimensional model. In a way, the 3D model can be thought of as a 'digital cast' of the object, without requiring contact with, and potentially damaging, the stone surface. The 3D model can either have a photorealistic render, or the colour (texture) can be removed to show the underlying geometry of the monument. Photogrammetry is one of the digital imaging techniques that lends itself particularly well to the recording and analysis of carved stone (as highlighted by ScARF (2012)), as well as to community engagement projects as shown by the ACCORD project and others (Jones et al 2017).

RTI is a digital imaging technique where the camera remains stationary in front of an object. In each photograph, a light source is moved to a new position to create various angles of raking light across the surface of the object. By including a reflective ball in the frame of the photograph, the position and angle of the light is recorded. The freely available software, RTIBuilder, then compiles the photographs and refers to this reflective sphere to determine how each pixel of each photograph reacts to different angles of light (Malzbender et al 2001; Malzbender & Gelb 2001; Gabov & Bevan 2011). The result is an interactive file where any angle of light can be simulated on the monument; this can highlight faint areas of carving that might go unnoticed when simply looking at the 3D model. This technique, like photogrammetry, is an accessible imaging method that has been implemented in many community projects, like ACCORD, as above, and OuRTI (Beale & Beale 2015; Jones et al 2017). While RTI is often carried out physically in the presence of the monument, Spectrum Heritage used what is called 'Digital RTI'. In this case, the 3D model was taken into a digital space and a virtual dome of 93 lighting positions were applied. An image was produced from each of these lighting positions, the results of which were used to create an RTI file for Inchinnan 5 (for

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more information on the application of Digital RTI, see Lymer 2015).

After the digital files produced by Spectrum Heritage were reviewed, the author discovered that one of the medieval 'Templar stones' was actually a reused early medieval recumbent cross slab. The removal of the photorealistic texture from the three-dimensional model of this stone revealed the remnants of unmistakable features that are shared with the Govan School's style of carving. These features included a cross with an incised border, flanked by panels of significantly worn interlace, which filled the top half of the stone. The lower half of the stone surface was



ILLUS 2 Unaltered image of the three-dimensional model of Inchinnan 5 made by Spectrum Heritage. The left image retains its texture, while the image on the right has had its texture removed, revealing the structure of the remnants of carving

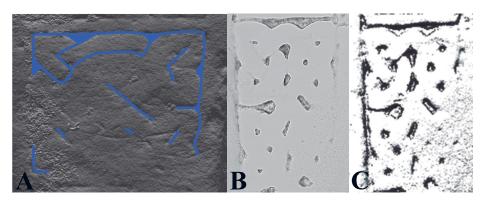
divided into two large panels which exhibit different decorative motifs (Illus 2). While the details of the ornament were unclear at the time of discovery, it was evident that Inchinnan's collection of early medieval carved stones had increased from four to five (Márkus 2018: 7).

DIGITALLY ENHANCED ANALYSIS

To identify the worn patterns on Inchinnan 5, this study applied a methodology recently developed by the author from analysis of the early medieval carved stones at Govan (Kasten 2019; in press). In essence, this method relies on the use of RTI to identify and highlight the remnants of decoration on the worn carved stone. Once these are recorded on a separate image, copies of the three-dimensional models of well-preserved stones in the same style of carving (from Govan, in this case) are digitally 'worn' to produce a comparative collection of known worn patterns. The remnants of these are then highlighted and compared to the unknown patterns in question, in this case those found on Inchinnan 5, to identify which it most closely resembles. Once a match has been made, the proposed pattern is imposed on the remnants via an image editing software to determine how well it 'fits' the remnants. This method, using digitally worn patterns from the author's current research at Govan (Kasten 2019), was applied to the newly discovered Inchinnan 5.

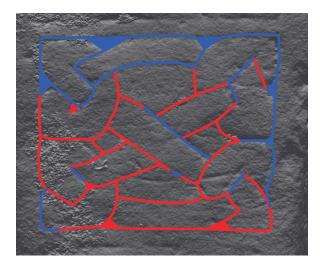
In the following sections, the stones from Govan will be referred to by the numbers assigned by Stirling Maxwell (1899) followed by the appropriate *Early Christian Monuments of Scotland* number (ECMS #) (Allen & Anderson 1903, vol 2). The illustrations of the reconstructed pattern utilise two colours: the areas highlighted in blue are areas of carving that are clear in both the 3D model and the RTI, while the areas in red are less apparent in the RTI and have been informed by the digitally worn comparative collection.

The RTI revealed that the panel located just below the cross was the best preserved. After highlighting the remnants (Illus 3A), it became apparent that units of this panel closely resembled the Stafford knot patterns that cover one of Govan's recumbent cross slabs, Govan 28 (ECMS 28; Illus 3B-C). The reconstruction of this panel revealed four outward-facing Stafford knots arranged in a larger knot (Allen & Anderson 1903, vol 1: 233, pattern no. 601) (Illus 4). While Stafford knots and closely related patterns are prevalent in the Govan School, the use of four units to create a circular knot in this manner is rare in the region, apart from the inward-facing arrangement reconstructed from a panel of the Capelrig cross (Macquarrie 2006: 15).



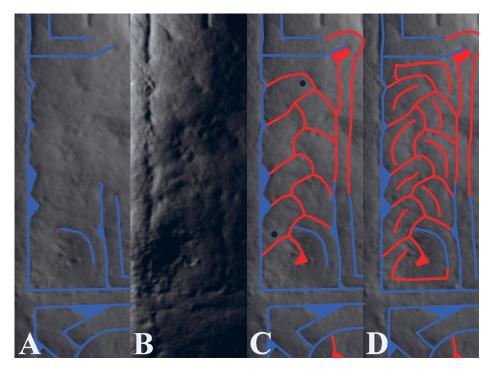
ILLUS 3 (A) The remnants from Inchinnan 5's central panel highlighted and compared to the truncated pattern of Stafford knots from Govan 28; (B) Image of the digitally worn 3D model of Govan 28's Stafford knots; and (C) Image of the unworn 3D model of Govan 28's Stafford knots

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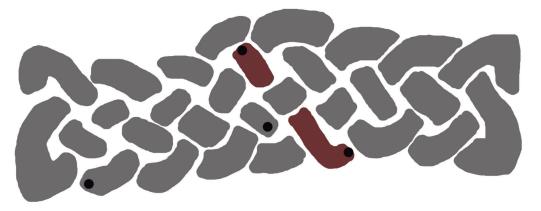


ILLUS 4 Stafford knot pattern recovered and imposed on Inchinnan 5's central panel

The rest of the stone is more significantly worn. Unfortunately, the two panels above the cross arms have been obliterated by weathering and the later medieval reuse of the monument; this has left these patterns unrecoverable through the present method. The panels adjacent to the cross shaft required additional close examination because their top halves were also impacted. The panel to the left of the shaft retains more of its carving, though faint remnants of the median-incised strands combined with the growth of moss and lichen on this part of the monument muddy its interpretation. Reliance on the analysis of the RTI alone was found to be most useful in this process due to the irregularity of the



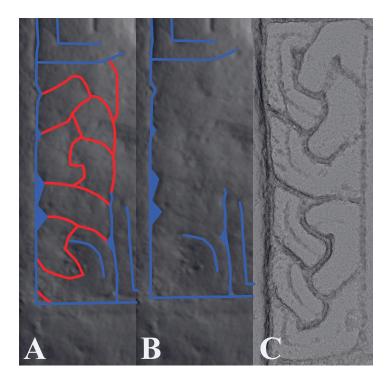
ILLUS 5 The left panel adjacent to the cross shaft of Inchinnan 5: (A) The image shows the highlighted remnants of carving identified from examination of the 3D model and RTI; (B) An image from the RTI file provided by Spectrum Heritage which uses specular enhancement to show this in more detail; (C) The proposed reconstruction of the pattern without median-incised strands, with black dots marking the loose ends of the braided strand; and (D) The proposed reconstruction with median-incised strands



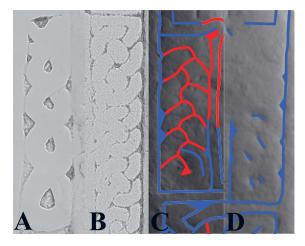
ILLUS 6 A diagram of the 'irregular' plait of Govan 26 (ECMS 21); the red strand has been braided into the plait, and the loose ends are marked with black dots

pattern, as will be demonstrated below. Based on these remnants and the spacing of the triangular notches along the edges of the panels (Illus 5A–B) (where strands of interlace have bent

and come into contact with an adjacent strand) the following pattern was postulated (Illus 5C-D). This appears to be a plait similar to several found at Govan - it is a sort of threecord plait constructed from a twist (two-cord plait) with an additional loose strand incorporated into the pattern. The open ends of this strand are 'tucked' into or behind the twist to disguise their free endpoints, which have been marked with black dots in Illus 5C. 'Irregular' plait such as this is not uncommon, as noted by both Brennan (2011: 3) and Thickpenny (2019: 145), especially in the Viking Age. Brennan has developed an innovative approach to interlace that takes these creative actions of the carver into account; he has described the treatment of this strand as 'braiding' (2011: 66). Braided loose strands have also been found in plaits on the sculpture at Govan, like the example from Govan 26 (ECMS 21; Illus 6). While the reconstruction in Illus 5 seems to be the most likely interpretation for this panel, a



ILLUS 7 (A) An alternative, though less likely, possible interpretation of the left panel; (B) The unaltered remnants of the left panel; (C) The interpretation in (A) is based on similar Stafford-knot related patterns used in the decoration of Govan 12 shown here



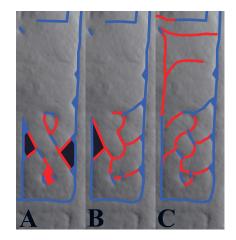
ILLUS 8 (A) A worn twist from the 3D model of Govan 8 (ECMS 4); (B) A worn panel of free-ring interlace from the 3D model of Govan 17 (ECMS 35);
(C) The proposed three-cord plait from the panel to the left of Inchinnan 5's cross shaft; and (D) The remnants of the panel to the right of the cross shaft of Inchinnan 5

less likely option is depicted in Illus 7A, which is more similar to the patterns found on both Govan 12 (ECMS 13) and Inchinnan 1 (Illus 7C). However, the amount of moss occupying this particular junction makes it difficult to be absolutely certain.

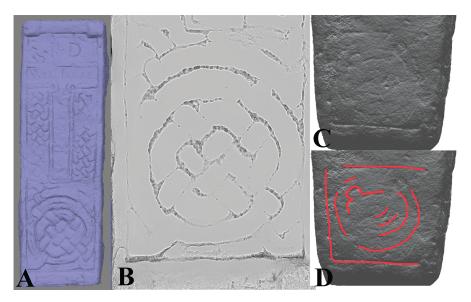
The pattern to the right of the cross shaft has experienced a similar degree of wear; the top half is nearly effaced, and only the triangular indents along the edge and a few prominent remnants remain (Illus 8D). Several options were considered for comparison with the carvings - a twist, as found on Govan 8 (ECMS 4; Illus 8A), free-ring interlace (ECMS 35; Illus 8B), or a plait, possibly similar to that found on the left side of the shaft on Inchinnan 5 (Illus 8C). An attempt was made to apply each of these patterns to the remnants (Illus 9). As can be seen, despite the large depression in the lower section of the panel, a twist did not fit the remnants (Illus 9A). Adding a strand to form a three-cord plait did not remedy these discrepancies (Illus 9B). The two distinct parallel lines above the small recess allow for only one pattern to fit this panel: free-ring interlace. Considering the number of triangular indents surviving along the right edge of the panel, it seems likely that two free-rings formed the design (Illus 9C).

The final pattern analysed here is that found in the panel forming the bottom section of the stone surface. From the three-dimensional model, the remnants of several concentric circles are visible. Of the patterns found in the Govan School, only free-ring knots fit this description (Allen & Anderson 1903, vol 1: 297, pattern no. 768). Its closest parallel can be seen on Govan 18 (ECMS 7; Illus 10A-B). While some segments of the interlacing strands can be identified, this panel of Inchinnan 5 is too worn to positively identify the rest of the pattern (Illus 10C-D). An attempt at applying an idealised ring-knot to the remnants of pattern is illustrated below (Illus 11). However, even Govan 18's ring knot is 'imperfect' because the outermost 'rings' are incomplete. The idealised pattern applied in Illus 11 is not necessarily representative of the actual pattern on

Inchinnan 5, as additional incomplete rings could have been added by the carver to fill the surrounding empty space.



ILLUS 9 (A) Shows the application of a twist pattern to the remnants, but the area in black indicates where this pattern does not fit the remnants of carving; (B) Shows the application of a plait to the remnants, highlighting in black where the pattern does not fit the worn remnants; (C) The application of free-ring pattern to the remnants fits as shown



ILLUS 10 (A) The intact 3D model of Govan 18; (B) The digitally worn ring-knot panel from Govan 18; (C) The unaltered lowest panel of Inchinnan 5 (produced by Spectrum Heritage); (D) Same as (C), but with the remnants of concentric circles highlighted (interpretation by the author)

THE STONE'S NEW CONTEXT

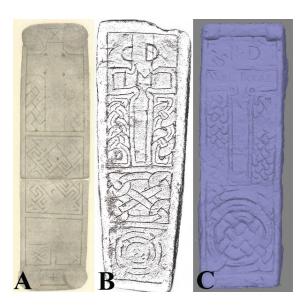
The final proposed reconstruction of Inchinnan 5 is provided below (Illus 12A-C). Illus 12C depicts the 3D model of the stone 'recarved'; this is done to test the interpretation and to better understand how the pattern would actually 'fit' the remnants of carving in three dimensions. The stone's layout differs from most of the stones in the Govan School because it incorporates two separate panels below the cross; most exhibit only a single separate panel, or no separation at all so that the pattern is continuous with the panels adjacent to the cross. The only other recumbent cross slab from the region around Glasgow that had a similar layout to Inchinnan 5 was stone no. 4 from St Blane's, Bute (Allen & Anderson 1903, vol 2: 408-9), which has unfortunately



ILLUS 11 Potential interpretation of Inchinnan 5's bottom panel (base image provided by Spectrum Heritage, interpretation by the author)



ILLUS 12 (A) Image of the unaltered 3D model of Inchinnan 5; (B) A complete 2D reconstruction of Inchinnan 5 based on the results of the Reflectance Transformation Imaging and comparison to digitally worn patterns; (C) The image on the right is the result of these patterns digitally 'carved' by the author into the 3D model kindly provided by Spectrum Heritage. The application of the pattern in 3D allows for a truer 'test' of the recovered patterns



ILLUS 13 (A) Image of a now lost recumbent cross slab from St Blane's, Bute (reproduced from Anderson 1900: figure 29); (B) The digitally recarved interpretation of Inchinnan 5 from Illus 12 above; and (C) Image of the 3D model of Govan 18, as above in Illus 10 gone missing. (A comparison of the stone from St Blane's, Inchinnan 5 and Govan 18 is provided in Illus 13.) The discovery of this stone is then a testament to the creativity of the early medieval carvers and highlights the additional information we could be missing due to the subsequent reuse or disappearance of these stones.

In conclusion, the reconstruction of the newly discovered early medieval stone from Inchinnan allows for additional connections to be made between the stones belonging to the Govan School, especially in the case of Govan and St Blane's, Bute. Recurrences of known features and patterns, like the cross with an incised boundary and the free-ring panels, highlight the consistency of the carvers employing the Govan School style. However, the re-emergence of pattern arrangements and structural layouts that are otherwise rare in the region accentuate how much we may be missing from our understanding of the material. This discovery also emphasises the research benefits of applying digital imaging techniques to the worn, unassuming monuments in a site's collection, not just focusing on the best-preserved monuments. The digital approaches incorporated in Inchinnan's comprehensive community heritage project have led to the identification of a new recumbent cross slab which can now be brought into future discussions on the early medieval carved stones of Strathclyde.

ACKNOWLEDGEMENTS

I am so grateful to Dr Heather James of Calluna Archaeology for her encouragement and assistance throughout this process, from the initial identification to the stone, the subsequent analysis, and finally culminating in the publication of the results.

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Thanks to Bill McCallum and all of the other members of the Inchinnan Historical Interest Group, who have been so welcoming each time I have been to Inchinnan. Many thanks to my PhD supervisors, Prof Stephen Driscoll of the University of Glasgow and Dr Stuart Jeffrey of Glasgow School of Art for their constant support and guidance.

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A Pictish 'serpent' incised slab from Jarlshof, Shetland

James Graham-Campbell* and Isabel Henderson[†] with Anna Ritchie and Ian G Scott

ABSTRACT

The identification and dating of a supposed Norse grave slab of 10th-/11th-century date from Jarlshof, Shetland, consisting of two decorated fragments picked up on the beach beside this multi-period settlement site in the 1930s, are rejected by the authors of this paper in favour of a Pictish attribution, a late 6th- or early 7th-century date, and a probable architectural function. On the basis of a detailed examination of the two fragments of the so-called 'Jarlshof Serpent' (front and back), alternative reconstructions of the incised motifs are considered, leading to the conclusion that they probably represent a hybrid in the form of a horse-headed serpentine creature with the body conventionally decorated in the manner of the Pictish salmon symbol. The use of such hybrid symbols by the Picts, as well as the growing evidence for their erection of symbol stones in association with structures, are discussed. The paper ends with a brief consideration of the implications of this reattribution for the traditional 'minimalist' interpretation of the Pictish settlement-phase at Jarlshof.

INTRODUCTION

James Graham-Campbell

BACKGROUND

On the occasion of the 17th Viking Congress, held in Lerwick in 2013, James Graham-Campbell delivered a paper on 'Death and Wealth in Viking Age Shetland' which included a brief survey of the stone sculpture attributed to this period.¹ Attention was drawn to the remains of a supposed 10th-/11th-century Norse grave slab from Jarlshof, consisting of two decorated fragments picked up on the beach beside the well-known multi-period settlement site in the 1930s (Canmore ID 513). Although published by J R C Hamilton in 1956 as being of Viking-Age date (see below), this identification was rejected by Graham-Campbell in favour of a Pictish attribution, with advice from Isabel Henderson - in anticipation of this joint paper intended to bring the true nature of this neglected, but important, sculpture to wider attention.

DISCOVERY AND PUBLICATION

These 'two fragments of symbol-bearing slab' (Illus 1) were first noted in print (and illustrated) in 1946 in the anonymous 'Introduction' to the Royal Commission's *Inventory of the Ancient Monuments of Orkney & Shetland*, where they were included in the paragraph devoted to Romilly Allen's 'Class I' Pictish symbol stones from Shetland (see now Historic Environment Scotland, Canmore ID 514: Jarlshof 1). They were more fully published a decade later in John Hamilton's report on the Jarlshof excavations, in which they were catalogued by him (1956: 189, pl xxxvii, 1–2) as:

Grave Slab Fragments. The larger is a corner fragment measuring $18\frac{1}{2}$ ins. in length and 8 ins. in width [470mm × 203mm]. One face is rough and unworked; the other is smooth and bears a portion of an incised representation of a coiled sea horse or serpent. Both edges are chamfered.

The smaller fragment measuring $6\frac{1}{2}$ ins. by 6 ins. [165mm × 152mm] is similarly worked, the incised representation being that of the head of the animal

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with clearly defined pointed ear and mane executed in a series of S scrolls. Two edges show trace of chamfer.

Although registered among the excavated finds from Jarlshof, these fragments are in fact stray finds (NMS: X.HSA 782; 'Excavation Find', Canmore: SC 1224039):

on the eroded beach [were discovered] two fragments of a sculptured sandstone slab by Mr. John Bruce and Dr. Richardson.² The fragments suggest an ornate grave slab with chamfered edge, of 10th or 11th century date, inserted in the mound above the ruins of the older broch settlement. A burial was actually discovered beneath the west gable wall of mediæval Jarlshof and tradition may have facilitated the acceptance of the mound as a convenient burial place in the 18th century (Hamilton 1956: 189).

John Hamilton's belief that these fragments are the remains of a Norse grave slab thus provided him with 'some confirmation' for his theory that the most likely explanation for the absence of any Viking-Age burials at Jarlshof was that 'the dead were buried, if they were interred close to the settlement at all, to the west on the promontory which has been entirely eroded away' (Hamilton 1956: 189), with the existence of a 10th-/11th-century grave in this area serving for him to create a link to the burial 'beneath the west gable wall of mediæval Jarlshof', which was constructed 'towards the end of the 13th or early in the 14th century' (Hamilton 1956: 190).

It will be noted that Hamilton offered no parallels, or any references, in support of his identification of the Jarlshof fragments as part of a Norse grave slab, while ignoring their previous publication as Pictish by RCAMS (as cited above). The result has been that the 'Jarlshof Serpent' has escaped the attention of students of Pictish sculpture and, indeed, it seems to have passed without any further consideration in print until 2009, when Anna Ritchie (in Scott & Ritchie 2009: 9, 45, no. 129) perceptively noted that the chamfered sides made it more 'likely that it decorated a building rather than marked a grave'. There is therefore an immediate problem in supposing the Jarlshof fragments to be of Viking-Age date because there appear to have been no buildings of this period on this part of the site to be eroded by the sea (Hamilton 1956: 'Master Plan'), quite apart from the fact that there was no Norse tradition of decorating stone buildings (cf Wilson & Klindt-Jensen 1966; Graham-Campbell 2013). Even as a potential (if rare) grave slab in an Insular tradition from Scandinavian Scotland, it contrasts markedly with the 10th-/11th-century example from Iona, Argyll, with its Norwegian runic inscription and incised 'expansional' cross (Barnes & Page 2006: 243–9, SC 14, with refs).

Not surprisingly, however, Ritchie was influenced by Hamilton's Viking-Age date in proposing that the Jarlshof fragments 'may be a rare example in the Northern Isles of carving inspired by Scandinavian art styles' (Scott & Ritchie 2009: 9), suggesting that 'the decoration on the lower part of the body is similar to the "stopped plait" ornament on Viking-Age stones in the Isle of Man' (see below). She added (Scott & Ritchie 2009: 9) that 'this possibility is strengthened by O'Meadhra's recognition of a Scandinavian motif-piece in Ringerike style amongst the slate graffiti from Jarlshof (1993, 436)'. The fact remains, however, that the head and neck of the 'Jarlshof Serpent' bear no similarity to the animal heads characteristic of the Ringerike style - or of any other potentially relevant style of Viking art (cf Wilson & Klindt-Jensen 1966; Graham-Campbell 2013). Indeed, it was Ritchie's opinion (Scott & Ritchie 2009: 9) that the incised design on the Jarlshof fragments 'most resembles a sea-horse such as that on a stone from Ness in Orkney' - an accepted Pictish symbol (see below).

DESCRIPTION AND DISCUSSION

Isabel Henderson

The two surviving fragments of Hamilton's 'Jarlshof Serpent' stone are both in good condition, such as to suggest that they were most probably found on the shore soon after they fell out of the exposed section. The carved surfaces are remarkably smooth and clean, with abrasion largely confined to areas adjacent to the fractures; the incision used on both fragments is deep, fluent and controlled, evidently the work

of an experienced sculptor (Illus 1). The reverses are uncarved and share some scaling of the top surface revealing a rust-brown layer (Illus 2).

DESCRIPTION

Fragment 1 (NMS: X.HSA 782B): the head and neck of a maned animal (Illus 1)

A remnant of a chamfered edge has survived above the head. The curved edge to the right of the head may also be chamfered (see below), but this chamfer was not recorded in the recent publication (Scott & Ritchie 2009: 9,45, no. 129). The left profile of the animal head is damaged, with loss of the nose and jaws. Only a portion of the right-hand section of the eye socket survives. The brow has a shallow curve defined by a double contour line which meets a similar contour line at the left edge of a pointed ear. The curved neck begins under the jutting ear. Slender at first, it expands to contain gradating lengths of hair, lightly curled at the ends, to form a mane. The lengths are contained within a narrow moulding cut so deeply as to be in false relief. In spite of the damage to the head, the shallow brow, the jutting ear and the fully expressed mane suggest that the head, when complete, represented a horse.

Fragment 2 (NMS: X.HSA 782A): a section of a widely curved serpentine body divided into two equal parts by a median line running along its length (Illus 1)

The lower horizontal edge of the fragment and a section of the edge at right angles to it have a chamfered edge of the same depth as the trace of a chamfer on the upper edge of Fragment 1. Above the median line, the curve of the body is decorated with a bold pattern of curves and concave V-shapes, the units of which are gradated so that they become smaller as they reach a double concave curved edge which encloses the decorated section of the divided body. Adjacent to



ILLUS 1 Two fragments of Pictish incised slab from Jarlshof, Shetland (© National Museums Scotland)

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ILLUS 2 The uncarved surfaces of the two fragments of incised slab from Jarlshof (Illus 1) (© National Museums Scotland)

this closure is a small single concave curve with a tight double convex curve, at approximately right angles to it. A short distance along the curve is a remnant of a single parallel curve.

The carvings on the two fragments share the depth of their incision, the use of double-curves and the skilful gradation of forms. In addition to these technical and stylistic similarities, the fragments are recorded as having a distinctive chamfer of between 28mm and 32mm deep on one edge of Fragment 1 and on two edges of Fragment 2 (Scott & Ritchie 2009: 9). There would therefore seem little reason to doubt that they are part of the same monument of uncertain overall dimensions, displaying designs carved by the same sculptor. Nevertheless, the fragments are not conjoined, and that the designs could be arranged in a different relationship to each other, be parts of two different animals incised on the same slab, or have been carved on different slabs, are all possibilities.

THE ANIMAL TYPE

Although the fragments were described by Hamilton as together comprising the 'Jarlshof Serpent', a creature with a horse's head and a serpentine body is not strictly a serpent, but a hybrid made up of two different species of animals, and so belongs to a well-represented group of hybrid animals in Pictish art which combine features of eagles and lions, and more commonly, horses, dogs, serpents and fish. The latter group subdivides roughly into hybrids with dog heads and those with horse heads, but the combination of species can differ within that division. In studies of Pictish sculpture these hybrids have been given many names including, most recently, 'S-dragons' and 'S-beasts' (Scott & Ritchie 2015: 182) in an attempt to avoid using names like hippocamp, fish-monster and sea-monster which carry cultural connotations. Even 'dragon' sets up false associations, and

'beast' has come to be associated with the Pictish symbol formerly named conventionally as a 'swimming elephant'. Names with an S-element usefully describe their consistent shape but are unduly uninformative. The distinctive feature which characterises these creatures is that they are hybrids and any name should bring this feature to mind. Hybridisation in art is primarily a means of depicting creatures of supernatural strength and was greatly favoured by Pictish sculptors – one has only to look at the Pictish beast symbol (Illus 3) which is made up of parts of animals with no core species (Henderson 1997: 15, 32 and passim). In this discussion, which admittedly does not provide a neat solution to the more general problem of nomenclature, I will refer to 'dog-headed hybrids' and 'horse-headed hybrids', both of which have serpentine bodies, and attributes of a fish, ending with either a tightly coiled tail, or a fully expressed fish tail.

A characteristic of the majority of both dogheaded and horse-headed hybrids is the division of the body by a median line running along the side of the body. This convention most probably has its origin in the naturalistic lateral line of the anatomy of fish that is clearly marked on salmon.



ILLUS 3 The 'Craw Stane', Rhynie, Aberdeenshire: a Pictish symbol stone displaying a naturalistic salmon and a Pictish beast, without the later standardised internal body-markings (© Crown copyright: HES)

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It almost invariably features in the design of the Pictish salmon symbol as, for example, on the 'Craw Stane', at Rhynie, Aberdeenshire (Canmore ID 17199; Fraser 2008: no. 43.1) (Illus 3). The line, which runs along each side of the body from the gills to the base of the tail, is made up of a series of sensitive cells that detect potentially hostile movement in the water, and so is essential to the survival of the fish. The Picts cannot have known of the function of the lateral line, but they obviously regarded its representation as essential to their naturalistic visual depictions of fish. The presence of a lateral line serves therefore as a signifier for a fish element in a hybrid.

The dog-headed and horse-headed hybrids appear on Pictish sculpture either as singletons or confronted pairs. The Perthshire cross slab Meigle 1 (Canmore ID 30838; Fraser 2008: no. 189) has

an impressive array of both types on its cross face (Illus 4): two singletons, one a horse head with a horse's forequarters and a fish tail, and the other a dog head with a coiled tail, both with lateral lines, and a confronted pair made up of a horse head and a dog head, both with fish tails and lateral lines. The singletons, as we shall see, can, in certain contexts, be considered for inclusion in the repertoire of the Pictish symbols. The confronted pairs are also symbolic but stand for different narratives, determined by their context. Pairs of confronted animals have a long history in art as being protective, and their symbolism is carried over into a variety of Christian contexts (Bailey 2011; Whitworth 2014). Although some of the design components of the paired hybrids are clearly related to those of the singletons, they are a later development used in relief sculpture

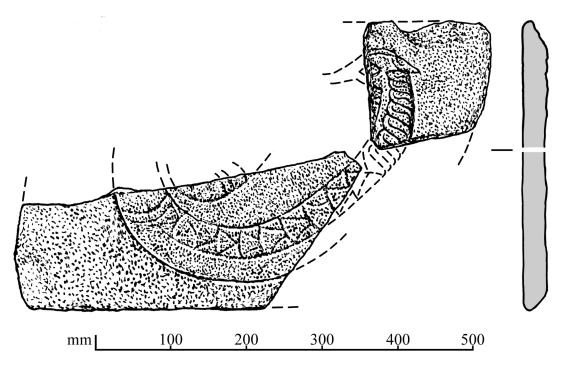


ILLUS 4 The cross slab Meigle 1, Perthshire, with its impressive array of dog-headed and horse-headed hybrid animals flanking the cross shaft; the top half of the reverse displays a variety of Pictish symbols (© Crown copyright: HES)

and so have no direct bearing on the early development of the singletons. A comprehensive, fully annotated description and analysis of both singletons and pairs has been published by Ross Trench-Jellicoe (2006).

THE DESIGNS ON THE 'JARLSHOF SERPENT' FRAGMENTS

Although the muzzle is damaged, the head and neck fragment almost certainly depicts the head of a maned horse; the mane is stylised and the surviving curvature and length of the neck is not that of a naturalistic horse. As most recently reconstructed, the head is positioned after a small hypothetical extension of the mane so as to attach it to the right end of a section of the serpentine body with the lateral line of a fish (Illus 5). The upper side of the line is filled with incised decoration tailored to fit the tapering end of the left side of the body. This decoration is considered by Anna Ritchie (Scott & Ritchie 2009: 9) to be similar to the form of interlace known as 'stopped plait' - presumably because the V-shaped lines do not go over and under the curves but are unattached - as found in Cumbrian (and Manx) Viking-Age sculpture, being a 'peculiar development' which Richard Bailey describes as having its 'seeds ... in earlier Anglian sculpture' (Bailey 1980: 205-6, fig 59). To the present writer, the pattern resembles more closely the central 'vertebral' feature of another equally distinctive pattern known as 'ring-chain', derived from 'the Scandinavian Borre-style repertoire' (Bailey 1980: 217-18, fig 60), if lacking the integral rings. In fact, neither of these analogies is exact and depends on a partial resemblance to elements of patterns used on free-standing crosses. The Jarlshof pattern can be related more appropriately to the body-marking of the Pictish serpents which make up the serpent and Z-rod symbols. For example, on the handsome carved symbol stone at Newton, Aberdeenshire, where the rearing serpent penetrated by the Z-rod has finely incised parallel curves across its body with V-shapes forming part of K-shapes on either



ILLUS 5 Reconstruction drawing by Ian Scott of the 'Jarlshof Serpent' (Scott & Ritchie 2009) (© Crown copyright: HES (drawing by Ian G Scott) (scale 1:5))

side of a circular central motif (Henderson & Henderson 2004: 34, illus 31; Fraser 2008: no. 38.1). Curves and V-shapes are also carved, in heavy broad incision, on the body of the snake on the symbol stone at Brandsbutt, Aberdeenshire (Fraser 2008: no. 7). Other Aberdeenshire examples with related simpler patterns, all very worn, are found at Inverurie, Insch and further north at Knockando/Pulvrenan, Moray (Allen & Anderson (1903) 1993, vol 2: fig 178; Fraser 2008: nos 26.1 and 160.2).

The location of the decoration on the body, as currently reconstructed (Illus 5), on the ventral side of the lateral line, opposite to the mane on the dorsal side, raises a difficulty, and it is one which on a carving that otherwise gives an impression of a sensitive response to the elements of the design is a jarring note. Both dog-headed and horse-headed hybrids, with fish elements, whether single or paired, invariably have bodymarking on the dorsal side of the body, above the lateral line. Where the decoration represents stylised fish scales or other markings, these are also located on the dorsal surface above the lateral line. Impressive examples of scales correctly positioned are the dog-headed pairs from Kilduncan, Fife, and on Dyke, at Brodie Castle, Moray (Trench-Jellicoe 2006: illus 16 and 17).

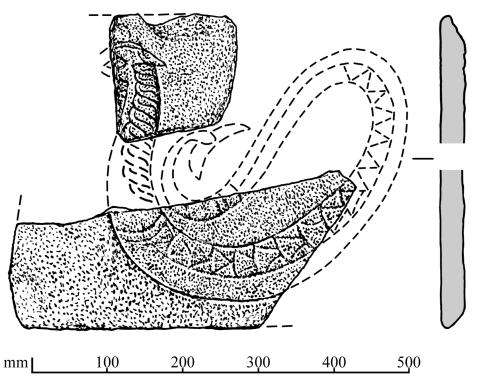
The confidently carved hybrid from Ness, Tankerness, Orkney, is analogous to the Jarlshof body fragment (Scott & Ritchie 2015: no. 13). The head is damaged but the closed jaws and slightly downwards inclination favour a representation of a horse head rather than a dog head. Ness has a lateral line dividing the body and its marking consists of closely set curves carved in strong false-relief running down its back. The fragment of a salmon symbol from Drumbuie, near Inverness, has diamond shapes decorating its upper surface, and even the salmon on the Portsoy, Moray, cylindrical stone observes this convention (Fraser 2008: nos 109.2 and 209). To decorate the ventral surface, the belly, on the inner lower curve, as indicated in the published reconstruction of the Jarlshof fragments (Illus 5), is anomalous, particularly when on the head, as at Jarlshof, there is a firmly delineated mane to indicate the side of the lateral line on which it should be carved (Scott & Ritchie 2009: no. 129).

There is a way in which the two fragments can be repositioned so as to correct this anomaly. It involves 'sliding' – to use Ian Scott's useful word when we first discussed what I proposed – the head fragment over to the left of the body fragment, with the head being positioned with the trace of a chamfer on its upper edge, parallel to the well-preserved chamfer on the lower edge of the body fragment (Illus 6). The strip of pattern then falls correctly, dramatically positioned on the wide curve of the back, the centre of gravity of the body design, between the development, respectively, of the thinner neck and tail.

If, as is probable, the lines of carving in the space adjacent to the closure of the strip of pattern are indicative of a tapering tail, then to accommodate the trajectory of its curve requires a considerable amount of space. This space has to be found by raising the neck of the creature into an erect, rearing position, a characteristic of the depiction of serpents in the serpent and Z-rod symbol. This produces a striking design giving the hybrid a commanding head position clear of its body (Illus 6). As presently reconstructed (Illus 5), the head merely looks back at its tail.

Conventionally, the tail should coil in the same direction as the head, creating an S or reversed S-shape. For example, the tail of the left-facing head of Ness, Orkney, coils anticlockwise, whereas the right-facing head of the Ulbster, Caithness, singleton has its tail coiled clockwise (Fraser 2008: no. 104).

Either version of the tail can be accommodated by the space made available on the complete Jarlshof slab after moving the head fragment to the left, but the more usual anti-clockwise coil could be anticipated from a sculptor of evident experience. The alternative to a coiled tail would be a fish tail. There are aspects of the design that supports this conjecture. First, there is a small hint of a carved line cut, as Scott recently observed, deep into the surface of the slab, towards the bottom of the mane, that could belong to the tip of a fish tail. Second, the wide curve of the body expresses movement forwards, propelled as it were by a waving 'heraldic' fish tail. Scott's drawing, which he kindly agreed to



ILLUS 6 Conjectural reconstruction by Isabel Henderson (2015) of the Pictish horse-headed hybrid on the Jarlshof slab (drawing by Ian Scott) (© Ian G Scott (scale 1:5))

make for this discussion (Illus 6), provides the necessary increased height for an erect rearing head position, an extension of the length of the mane, the reduction of the decoration to a zigzag pattern allowing a natural continuation of the lateral line, and a waving tail elegantly curved so as to complement the wide curve of the body. A clockwise coiled tail, such as Scott sketched in with a light broken line in his drawing for the Scott & Ritchie (2009) publication (Illus 5), would also allow for a longer tail, likewise pleasingly curved, but ending in a stationary coil (Canmore ID 514: SC 1135143). The faint sketch of the tail was not picked up in the publication, but can be seen when the online image is magnified. A correctly coiled anti-clockwise tail cannot be fitted into the Scott drawing, but there is plenty of space for it if the head fragment has been moved to the left end of the body, with the decoration correctly located on its back. On balance, the care given to express the horse's mane suggests that the rest of the carving would be expected to conform to the classical hybrid of a sea-horse where the body finishes with a fish tail.

After these diverse conjectures it must be emphasised that what survives of this carving on the two fragments is a powerful work of art worthy of a place in the symbolic art of the Picts, comparable in controlled execution to the finest examples of the Pictish beast, a similarly hybrid creature. The published reconstruction (Illus 5) presents the Jarlshof hybrid in a compact selfprotecting position with an anomalous departure from the conventional location of decoration, incompatible with the quality of the execution.

A FURTHER CONSIDERATION OF THE CHAMFERS

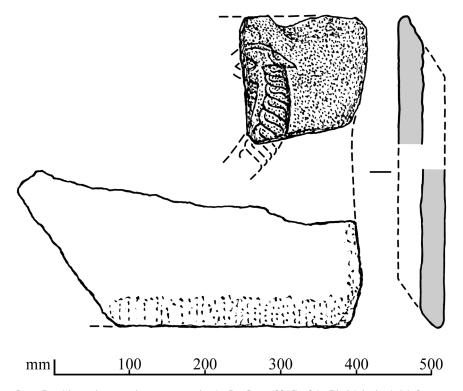
As noted earlier, the recent description and illustration of the fragments record that 'parts of three sides survive with a distinct chamfer 28–32mm deep'. The cross-sections of the three

chamfers are shown in the illustration (Illus 5): one at the lower edge of the body fragment, a second on its left edge and a third on the upper edge of the head fragment (Scott & Ritchie 2009: 9, no. 129). If this is correct then there is no physical reason why the head should not be repositioned on the left, as described above, so as to correct and enhance the design (Illus 6).

On a recent inspection of the two fragments, by myself, Anna Ritchie and Ian Scott, a further look at the head fragment suggested that a fourth chamfer might have been missed. This new observation, if correct, raises difficulties. If the head fragment is positioned to the left of the slab, a chamfer on its right edge would be internal. If the head is positioned at the right, as in the reconstruction published in 2009 (Illus 5), the trajectory of its right edge, indicated there by a broken line, suggests a curved edge. Such a curve is also difficult to accommodate within a slab format. If it is not a chamfered curve, then it would have to be explained as a damaged and worn internal fracture. The extent and nature of the trace of a chamfer on the right-hand edge, described by Hamilton (1956; see above), is left unspecified. There is physical evidence of damage to the lower right-hand corner of the fragment and of more forceful damage to the top upper right-hand edge.

If the reconstruction favoured here – where the hybrid animal looking ahead to the left moves forward in a powerful fashion, with the run of the strongly carved mane and decoration working together on the dorsal surface cannot be accommodated – then the most defensible alternative is that the fragments belong to two different hybrid animals, carved on different slabs, parts of their backs surviving, one with a mane, and the other with a generously curved decorated back.

Another suggestion, made by Ian Scott, proposes that the head and body belong to two



ILLUS 7 Alternative tentative reconstruction by Ian Scott (2015) of the Pictish incised slab from Jarlshof (© Ian G Scott (scale 1:5))

different animals with the head fragment being incised on one side of the slab and the body fragment on the other. If the body fragment is turned over so that it is blank, with the vertical chamfer on the right, then this would allow the newly observed chamfer on the right edge of the head fragment to be roughly aligned with it (Illus 7). The alignment, of course, still does not have the status of a conjunction.

A photograph of the head fragment set upon a rough plank was taken, presumably close to the time of its discovery, and is available on Canmore's digital record of small finds at Jarlshof (Canmore: SC 1224393). Here the curve of the right edge is evident, and its lighting gives an impression that it has been roughly dressed. I have not been able to locate a similarly early photograph of the body fragment, but the two fragments are shown photographed in studio conditions in a photograph taken in 1938 (Canmore: SC 1220372), where the curve of the right edge of the head fragment is clearly shown.³

In this scenario, the irregularity of the inferred vertical chamfer contrasts with the straight horizontal chamfer on the lower horizontal edge of the body fragment, but the condition along the length of the vertical chamfer, in the gap between the fragments, is beyond recovery. In Scott's new reconstruction the curve of the trajectory requires a slight conjectural compensatory concavity so that it can join up with the surviving vertical dressed edge of the body fragment. A closer comparison of the surfaces of the reverses of the fragments, and a further comparison, including measurement of the depth and angle, between the sections of what has been interpreted as a vertical chamfer, would have a bearing on the validity of this suggestion, which Scott, at present, describes as a 'tentative reconstruction'.

An objection to this tentative reconstruction, where the incised designs are carved on different sides of the slab, is that the colour and condition of the carved surfaces of the two fragments appear so similar, as does the depth of the incision (Illus 1). It is also perhaps unlikely to be the case that the slab had carving on both sides as a degree of differential exposure would be expected. At our recent inspection it was noted that a layer of parts of the uncarved surface had peeled away leaving a rust-coloured layer exposed (Illus 2). There is minimal evidence for this wear, and consequent discolouration, on the incised surfaces.

Such an arrangement, with carving on both sides of the slab of the same type of sinuous creature, would be unusual, whereas a composition of pairs on the same side has numerous precedents, such as on the 'Craw Stane' (Illus 3) and on the symbol stones at Newton and Brandsbutt, also from Aberdeenshire, mentioned above. The separation of the designs raises the possibility that we have here a trial piece, with one side displaying a partial sketch for a head. However, there is nothing about the carving of the head, or any means of determining how it was placed on the complete slab, to support this view. The elements of the head that survive are fully expressed, worked with firm precision that gives a strong impression of belonging to a completed design.

THE SIGNIFICANCE OF THE DOG-HEADED AND HORSE-HEADED HYBRIDS

In 2011 a cross slab carved in relief on both a cross-bearing face and the reverse was recovered from the floor of a house at Appiehouse on Sanday. This is the first relief cross slab to be found in Orkney (Scott & Ritchie 2015: 181–3, no. 12, illus 6). Its front face is carved with an equal-armed cross, set in a base. The animal ornament to the left of the shaft is congested and very worn but appears to be a juxtaposition of fantastic animals. To the right of the shaft, occupying the whole background space, is a single dog-headed hybrid, facing left towards the cross. The serpentine body has a lateral line and ends in an anti-clockwise coiled tail.

The Appiehouse dog-headed hybrid is markedly close in design and proportion to the hybrid on the Ulbster, Caithness, cross slab (Fraser 2008: no. 104). The case made for the Ulbster hybrid being a Pictish symbol lies in its close association on the slab with a group of six other classic forms of Pictish symbols. To qualify as a symbol a degree of repetition in design is required, and the close resemblance between the singleton dog head with coiled tail on Ulbster and Appiehouse strengthens the case for this hybrid being regarded as part of the corpus of symbols. In her recent full discussion, Anna Ritchie makes the pertinent observation: 'Whether or not they are symbols ... what is important here is that the S-dragon/hippocamp/ fish-monster is a definitively Pictish motif' (Scott & Ritchie 2015: 182). Yet another example of a dog-headed hybrid in Orkney is carved in relief on a battered cross slab recovered in late 2016 from the Norse cemetery site at Newark in Deerness (Canmore ID 3033; for images of the cross slab, see Archaeology Orkney 2016). It is virtually identical in design, scale and location on the slab, to that on the Appiehouse cross slab.

The fish with a dog head on the symbol stone at Upper Manbeen, Moray, already has the basic elements of this hybrid and its portrayal, along with a mirror and comb, further supports an affiliation to other standard symbols in the context of a symbol stone (Allen & Anderson (1903) 1993, vol 2: 128-9, fig 134). Allen gives a formal account of the circumstances of his visit to record the symbol stone at Upper Manbeen and there is no reason to doubt the accuracy of his drawing of what he called the 'fish-monster' (contra Fraser 2008: 114, no. 164). Alastair Mack (1997: 103) gives a description of the nature of the flaking of some of the body of the fishmonster but its dual nature is not impaired. In a later update, Mack (2004: typescript revision) reports the presence of a serpent symbol above the fish-monster, so that Upper Manbeen is now seen to display the standard arrangement of two symbols and a mirror-and-comb.

DATING

It is argued above that the Jarlshof fragments belong to the corpus of Pictish sculpture which conventionally dates from the 7th to the 9th century AD. The carving is fluently incised on a naturally smooth surface, and, although not conjoined, they can confidently be considered as contemporary carvings, characteristic of what is regarded as the earlier phase of Pictish sculpture.

The stylised carving style of the mane on the head fragment, and the sinuous taper of the wide curve of the laterally divided body fragment, relate to characteristic aspects of the style of the general repertoire of animal portraits, which now includes the notable local example of the bear from the Pictish settlement at Old Scatness.

This animal repertoire has been a mainstay for the relative dating of the Pictish symbol stones because its distinctive scrolled curvilinear bodymarking, used to emphasise musculature, is also found in a number of extant Insular Gospel Books, notably in the design of the Lion Evangelist symbol in the Book of Durrow, thought to be the earliest manuscript in the group. The primacy of the Pictish animal design is currently generally accepted, but the dating of the Gospel Books is under revision, with a possible starting date into the early decades of the 8th century, with Durrow later in the series (Nees 2011; Netzer 2011). This need not affect the relative dating of the animal portraits, but the date horizon would be extended. A recent revival of the suggestion that the incised Pictish animals with muscle-defining scrolls could derive from the manuscript Evangelist Symbols is misleading, for the comparanda cited are taken from later dressed Pictish sculpture, ignoring the markedly more accurately applied scrolls used on the earlier incised carvings on unshaped stones (Henderson & Henderson 2004: illus 25-30; Moss 2018: 49, 52).

On the other hand, the accomplished curvilinear art of the South Ronaldsay, Orkney, symbol stone, incised with two abstract symbols (Fraser 2008: no. 173), has recently been dated to AD 400–650, on the basis of its use of 'complex spirals, peltae and scrolls: older "heritage motifs" that were taken from Roman-period art' (Goldberg 2015: 157, fig 147). For the present writer, the striking uniformity of the curvilinear art of the symbols, both animal and abstract, and their evident relationship to fully understood, earlier, repoussé metalwork forms, support an initial starting date for their carving on stone in the 7th century AD.

The visual impact of the assured technique of the Jarlshof design(s) is most probably attributable to its Pictish origin. The creature (or creatures), surviving only as fragments, charts a Pictish preoccupation with hybrid creatures comprised of fish with horse heads or dog heads. The primitive form, the incised dog-headed fish on the symbol stone at Upper Manbeen, is followed in strong contrast by the elegant, faithfully copied, confronted classical hippocamps carved in relief on the Aberlemno Churchyard, Angus, cross slab (Henderson & Henderson 2004: illus 37; Fraser 2008: no. 51.2). The cross slab, Meigle 1, displays all possible hybrid combinations, single or paired, dog heads or horse heads (Illus 4), which thereafter were selected for use on many formats of Pictish

sculpture, including cross slabs or their margins, in a simple protective or peaceable role, or as part of other Christian iconography. Our incised fragments, I would suggest, belong to a phase just prior to the northern assimilation of the dogheaded hybrid to the corpus of Pictish symbols evident on the relief slabs at Ness, Appiehouse and Newark, Orkney, and Ulbster, Caithness (see above). Here we can observe, during the



ILLUS 8 Pictish symbol stone from the Dairy Park, Dunrobin Castle, Sutherland, with internal decoration of the symbols, the serpent having the naturalistic body-markings of an adder. (© HES (Tom and Sybil Gray Collection))

development of the Christian cross-slab format, the expansion of the symbol system to include a hybrid symbol, additional to the still flourishing Pictish beast of the symbol stones.

This development is demonstrable and if we were to take - moving backwards in time - the date of the mature relief sculpture at Portmahomack, Ross & Cromarty, as having been produced prior to the destruction of the monastery, radiocarbon dated to between AD 780 and 830 (Carver 2008: 64, 136-8, 208-9), and the inferred documented introduction in southern Pictland of relief stone sculpture by Northumbrian masons in the early years of the 8th century AD, then the Jarlshof fragments could take their place, on typological grounds, as being produced in the first half of the 7th century AD, along with the rest of the animal portraits (including quadrupeds, birds, fish and reptiles), which brilliantly exploit curvilinear art in incision to the point of producing work in semi-relief.

Recently published work (Noble et al 2018) has, however, shown that the Pictish symbol system had an earlier start than has previously been thought; a supportive typology of the symbol designs is promised. While in the past it has been possible to point to what could be regarded as earlier primitive forms of the symbol designs (for example, in Henderson & Henderson 2004: 171), these can now be securely dated to the 3rd and 4th centuries AD (Noble et al 2018: 1341). This has been achieved by employing the relatively new technique of Bayesian modelling, by means of which radiocarbon dates of excavated sites with Pictish symbol stones and other archaeological information can be combined and analysed to give more accurate and precise results (Noble et al 2018: 1335-9). The earliest and subsequent phases of the chronology of the symbol system can now be set on a scientific footing.

The Jarlshof fragments cannot benefit directly from this approach, but the case for their forming parts of a Pictish symbol is supported by their being attributable to a subsequent phase of the new chronology. This later phase is exemplified by the redating of the symbol stone found in the Dairy Park, Dunrobin, Sutherland, in 1977 (Canmore ID 6567; Fraser 2008: no. 139) (Illus 8). This monument has featured regularly in previous discussions of the date and function of the symbol stones for it was erected over a rectangular cairn containing female remains in a long cist grave (Close-Brooks 1979). The burial was fully excavated, and two radiocarbon dates obtained, neither of which were later regarded as satisfactory. Noble et al maintain that there is nothing in the excavation report that prevents the view that the symbol stone was erected at the time of the burial, and the human remains have now been radiocarbon dated with 'high precision' to cal AD 575-625, at 95% probability (Noble et al 2018: 1341). While there is obviously no question of a direct relationship between the Jarlshof fragments and the Dairy Park monument, both share what is regarded as a defining characteristic of the development of the symbol system - the elaboration of the earlier plain designs by internal decoration (Noble et al 2018: 1341, 1343, fig 9). The small fragment uses stylised scrolls contained within the outline of the horse's neck and the larger fragment elaborates the back of the serpentine body with a neatly applied strip of decoration.

For the present writer, it is also the quality of the Jarlshof carving, the carver's control of the flow of the incised line, which can be compared with the stage of the carving of the Dairy Park monument, and it is to be hoped that the forthcoming complementary typology takes into account the development of the skills of carving and capacity for expressive design, both of which give this phase of Pictish sculpture its unique place in the history of early medieval art.

The hard-won new knowledge offers us an objective dating context of the late 6th to early 7th century AD for the Jarlshof fragments which, while not confuting the date proposed independently above, can now be used confidently to relate them to the growing corpus of comparative material available in the Northern Isles.

Given the range of Pictish art in the Northern Isles, from scratched pebbles and bones to exceptionally finely carved abstract symbols, figurative cross slabs and handsome church furniture, such as the Flotta, Orkney, altar frontal (Henderson & Henderson 2004: 209–10, illus 309), the recognition of an animal portrait phase at Old Scatness and now Jarlshof comes as no surprise. We can reasonably anticipate firmer dating emerging from this region, particularly where relevant finds are being made in the context of excavations.

FORMAT, FUNCTION AND DISPLAY OF THE JARLSHOF FRAGMENTS

Dog-headed and horse-headed hybrids appear in the form of symmetrical confronted pairs on symbol-bearing cross slabs, on non-symbolbearing recumbent grave markers, and on shrine posts. In addition, handsomely fish-tailed, serpent-bodied, dog heads serve as marginal animals on symbol-bearing cross slabs. To accommodate the designs on the Jarlshof fragments as belonging to a single creature, as reconstructed here, would require a slab of dimensions broader than its height. This would suggest that when complete it was a panel. The iconographically complex panel found at Portmahomack has a worked 'roll-top' upper edge and an unworked lower edge for insertion in a base or the earth. The overall iconography of the Portmahomack panel is of menace and protection, the latter represented in its famously naturalistic depiction of two adult cattle tending a calf (Henderson & Henderson 2004: 205, illus 303). The Orkney horse-headed hybrid from Ness, which in several respects compares to that from Jarlshof, has a straight incised line on what may be the upper edge; and on the lower edge, a pecked line, below which is an unworked area similar to the Portmahomack panel. It too might be a section of a horizontal panel. Unworked areas at the bottom of panels for insertion in a plinth or in the earth are also found at Rosemarkie, Rossshire. There is barely enough unworked stone for the Jarlshof body fragment to be so inserted.

Anna Ritchie has wondered if the format of the slab should be viewed as vertical, tall and narrow, rather than horizontal, with the lower edge of the animal fragment being the right-hand edge (pers comm). There would certainly be more uncarved stone available for insertion of the body fragment on what would then be the lower edge. A hybrid with a tightly coiled tail could be fitted into the space available, and the newly proposed, somewhat irregular, curved chamfer could be more satisfactorily accommodated as part of a top edge. A disadvantage, of course, if the published reconstruction is so manipulated, would be that the anomaly between the location of the decoration of the body and the mane would remain. On balance, Ritchie thinks it preferable to see the smaller fragment either as part of a larger slab with two serpentine creatures, or as part of a separate second slab. She also draws attention to physical similarities in format with the Old Scatness bear stone which has a rounded chamfer along one edge (Bond 2010: 305, fig 6.5.1).

In determining the function and display of the Jarlshof fragments the most useful analogy is the remarkable Pictish animal carving of a profile bear recovered from the Pictish phase of the settlement at Old Scatness, not far from Jarlshof (Henderson & Henderson 2004: 229; Dockrill et al 2010). The bear is fluently carved on a slab with at least one vertical dressed edge, sharing with the Jarlshof fragments the natural smooth sandstone surface which in some areas has peeled away (Bond 2010: 304, pl 6.5.1; 305, fig 6.5.1). Its profile stance, with its heavy hindquarters, braced forelegs and menacing reach of the neck, is expressed with masterly naturalism, enhanced by the accurate use of the standard Pictish stylised body-marking to delineate the power of its musculature. The combination of naturalism reinforced by formal body scrolls makes it a notable contribution to the Pictish animal portraits, all of which must ultimately share their origin in native art (Henderson 1997: 13-14). The finds at Scatness include a fragment of another symbol stone which displays a salmon in a style that also belongs to this class of animal art (Henderson 1967: 107, fig 13). Although only a section of the lower body of the fish survives, the lateral line and two well-articulated fins are accurately delineated; it was found in the vicinity of Structure 11, part of the Pictish phase of the settlement (Scott & Ritchie 2009: 2, 14, no. 8; Bashford 2010: 306–7, pl 6.5.2 and fig 6.5.2).

The excavators suggest that the bear carving may have been displayed in a central living area of Structure 11 of the Pictish phase, for the dressed edge of the slab is similar to the dressed edges of the orthostats which survive as part of its radial piers. The bear could therefore be part of one of the missing orthostats (Dockrill & Bond 2010: 364, pl 7.4; 366, pl 7.5).

The recent discovery that the impressive symbol stone at Rhynie, Aberdeenshire, incised with a salmon and a Pictish beast (Illus 3), stood in relation to an entrance within the excavated Rhynie complex and that other sculpture at Rhynie had designated functions, is further evidence that the Picts used powerful animal art in architectural contexts either adjacent to entrances, or in indoor or otherwise selected protective settings (Gondeck & Noble 2011: 299). The Jarlshof carving, when complete, may also have been conceived as a piece of architecture, as Anna Ritchie proposed (Scott & Ritchie 2009: 9).

CONTEXT

James Graham-Campbell

According to Hamilton (1956: 106):

When Viking colonists arrived about A.D. 800 the site was still occupied by a few scattered families living in small huts on the landward slope of the mound and still making use of the old wheel- and passage-houses. The boundary wall enclosing this settlement influenced the siting of the new farmstead.

There is in fact no way of knowing how much of 'the west side of the Pictish settlement' at Jarlshof has been taken by coastal erosion, although already by the end of the 19th century, when John Bruce began his excavations (in 1897), half the broch had been claimed by the sea - together inevitably with many of the socalled 'secondary structures' - as can be seen from his published 'Plan of Ruins' (Bruce 1907: fig 1). Indeed, the suggestion that the 'Jarlshof Serpent' slab found on the beach derived from a significant building, by analogy with the bear carving at Old Scatness (see above), suggests that the main focus of Pictish settlement could well be missing, as already proposed by Anna Ritchie (1997: 41). From the excavated area, however, there are three incised sandstone discs, including one considered by Hamilton to have

'a coiled serpent design' and another with a definite 'double disc symbol' (Hamilton 1956: 84, pl xvii, c; Henderson & Henderson 2004: 88, illus 113-16; Fraser 2008: no. 213; see also Ritchie 1997: 42-3). These were not, however, discussed by Hamilton in relation to the nature and status of the Pictish settlement at Jarlshof. Indeed, a significant group of incised slates was mistakenly attributed by him to the Norse (Hamilton 1956: 106, 114-15, 121, pl xxi), apart from a cross-incised slate from an immediately pre-Viking context (ibid: 88, pl xvii, a), because Uaininn O'Meadhra (1993: 427-31) has since argued persuasively that 'none of the other slatemotifs is necessarily Viking either' (with the exception of the Ringerike-style 'motif-piece' mentioned above).

Hamilton's minimalist opinion of Pictish settlement at Jarlshof was doubtless much influenced by the views published by the distinguished Norwegian archaeologist, Haakon Shetelig (1940), adopted from his colleague, Anton Brøgger. In his (1928) Rhind lectures, Brøgger had concluded that the Norse settlers 'came sailing to a land in which there were few people' (Brøgger 1929: 67), with 'the Pictish population in Orkney and Shetland' having seemingly 'lost its organization and power of resistance' and having 'perhaps also declined in numbers and wealth' (ibid: 65). Shetelig himself observed (1940: 21) that 'the islands were at most only very thinly peopled when the Norwegians made their first settlements'.4 This interpretation has of course long since been abandoned (see Morris 1991: 78-80 for a summary) and the recognition of the 'Jarlshof Serpent' as a Pictish symbol, from an architectural context, will have an important role to play in any reassessment of the Pictish phase of this multi-period settlement, in the light of the excavations at Old Scatness.⁵ Indeed, the Old Scatness and Jarlshof symbolincised slabs taken together suggest a comparable status for these two neighbouring Pictish sites on the eve of the first Viking raids. At that time they would both have been flourishing settlements, the inhabitants of which would no doubt have possessed portable wealth of the type represented in the (not-so-distant) St Ninian's Isle treasure (Small et al 1973).

CONCLUSION

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The most likely explanation for the quality and visual impact of the Jarlshof fragments is that they were commissioned by an ambitious Pictish leader who shared the entrenched belief in the protective effectiveness of symbolic images of powerful animals, natural or hybrid, displayed for all to see, in or around power centres, in a style ultimately belonging to the symbol stones. For this purpose it was important to employ a sculptor experienced both in design and execution. That such a sculptor was available in the north of Scotland is amply supported in the quality of the work by symbol-stone cutters recovered in Orkney, including the accurately delineated eagle symbol from Knowe of Burrian (Fraser 2008: no. 168; Scott & Ritchie 2015: no. 3), which has the distinctive design traits belonging to the repertoire of Pictish animal art represented in the Old Scatness bear and salmon.

Hamilton called the 'Jarlshof Serpent' 'ornate' and, although the word is perhaps not one that an art historian would use, one can see exactly what he meant to convey. The reconstruction favoured here (Illus 6) removes a surprising anomaly in the otherwise accomplished design, recently reconstructed. Conjecturally it as presents the corrected arrangement of the body of the Jarlshof horse-headed hybrid in a design which would be appropriate to its intrinsic function as a supernaturally powerful guardian. As argued above, there is now a strong case that a singleton dog-headed or horse-headed hybrid can be regarded as a Pictish symbol. The use of sculpture incised with a formidable animal as a guardian in a structural setting has a conceptual parallel not only at Old Scatness but in the wellknown contexts of the incised bulls at Burghead, Moray, and the boar carved conspicuously on the Dunadd fort, Argyll (Fraser 2008: nos 152.1-6 and 74).

If it is concluded that the surviving fragments of the 'Jarlshof Serpent', even when the mane on the smaller fragment and the decorative strip on the larger one are repositioned correctly, cannot provide sufficient evidence to allow them to be interpreted as parts of a single animal carved on a single slab, then they must be assigned to two related hybrids carved either on different sides of the same slab, as Scott tentatively suggests, or on two separate slabs, perhaps within a structure or at an entrance.

The fragments known as the 'Jarlshof Serpent', supposed by Hamilton to have formed part of a Norse grave slab and recently catalogued under the heading 'Curiosities' by Scott and Ritchie (2009: 9, no. 129), should be returned to the original (RCAMS 1946) assumption that, along with the symbol-bearing discs, they belong to the Pictish phase of Jarlshof, being carved with incised designs relatable to Pictish symbols.⁶ Recent excavation now gives them a local context in closely comparable high-quality incised Pictish symbols, bear and salmon, produced during the Pictish phase of the settlement at Old Scatness. The symbol stones are no longer thought of as exclusively field monuments. In the light of recent systematic work on the relationship of incised symbol stones to structures (Gondeck 2015), it is most probable that the fragments of the 'Jarlshof Serpent' belonged to a monument created for an eroded structure which stood immediately above where they were found on the beach.

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NOTES

- 1 For a shortened version of this paper, omitting both Viking-Age sculpture and silver hoards, see Graham-Campbell 2016.
- 2 Dr J S Richardson was responsible 'from 1936 to 1939' for the continuation of 'the stripping of the Viking settlement so successfully begun by Dr. Curle' (Hamilton 1956: xiii); there exists a photograph of the fragments dated 1938 (Canmore: SC 1220372).
- 3 A further well-lit photograph of both fragments was taken in 1953 (Canmore: SC 1224039), presumably for publication in Hamilton's *Excavations at Jarlshof* (1956: pl xxxvii, 1–2).
- 4 The Brøgger/Shetelig hypothesis of 'an almost empty land' was widely adopted in the mid-20th century, although strongly resisted by Hugh Marwick (1951: 36–7); see Wainwright 1962.
- 5 Hamilton's 'Late Post-broch Huts' (1956: 85–8, fig 42) are considered by Turner et al (2005: 247) to be 'reminiscent of the Old Scatness Pictish buildings'.
- 6 Anna Ritchie (2018) has recently suggested that the provenance of a small fragment of a sand-stone slab with incised ornament on both faces (Scott & Ritchie 2009: no. 3) is also most likely to be from 'the eroding shoreline of Jarlshof', having been donated in 1861 to the Shetland Literary and Scientific Society by John Bruce of Sumburgh.

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Portraits of James I and James II, kings of Scots: some comparisons and a conjecture

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ABSTRACT

This paper presents an inquiry into the origins of some painted portrait images of James I and James II of Scotland which are first attested in the late 16th century. That the likenesses are not authentic is shown by comparisons with images of these kings which have a demonstrable claim to authenticity, and by a consideration of the costumes depicted: the latter were evidently derived from sources which, although of 15th-century date, were too late in the century to have been authentic for these particular rulers. On the evidence of the sets of portraits to which these paintings belong, one in Edinburgh and another in Munich, it is suggested that the faces of James I and II were based on those of the (authentic) images of James III and IV respectively.

There is, in the Scottish National Portrait Gallery in Edinburgh, an intriguing set of paintings of the first five Jameses, kings of Scots. The set has belonged to the Gallery since 1909, when it was purchased from the estate of a private owner in St Andrews; nothing is known of its earlier provenance.¹ Shortly after the set was acquired, the then director of the Gallery, James L Caw, published an article in which he suggested that the five pictures were painted in the 16th century, possibly as early as the reign of the latest king represented, James V (1513-42), and in any case no later than the latter part of the century. Caw also remarked that the likenesses of the first four Jameses, although painted posthumously 'were almost certainly founded upon earlier portraits, then existing but now lost'.² These views are still generally accepted (though the set is now not thought to date from as early as James V's reign: more will be said presently on the question of dating), and the paintings of all five monarchs continue to be reproduced as likenesses of them. The authenticity of the images of James III, IV and V has been firmly enough established and is not in question.³ In contrast, the origins of the images of James I (reigned 1406-37) and James II (reigned 1437-60) have so far eluded

identification, and it is the purpose of this paper to give closer consideration to the portraits of these two kings (Illus 1 and 2) in the light of comparisons with other relevant material.

The first useful comparison to be made is between the James I and a drawing in the Recueil d'Arras. The Recueil is a large volume of portrait drawings which were evidently made during the 1550s and 1560s by Jacques Le Boucq, a herald of Valenciennes. The drawings are copies of earlier portraits, both painted and sculpted, many of which are now lost. Although most of the sitters represented were members of the ruling class in the Netherlands, about a dozen of the drawings show sitters who were either Scottish themselves or in some way linked with Scotland. Among these is a drawing inscribed Jacques Roy descoce (Illus 5). In the absence of any independent source to confirm that the inscription identifies the sitter correctly, one must be cautious; at the same time, however, it is worth noting that, where corroborative evidence is available, the inscriptions in the *Recueil* seem to be reliable with remarkably few exceptions.⁴ As Lorne Campbell has pointed out, this drawing appears to be an accurate reflection of a portrait painted in the 1430s in the most up-to-date

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ILLUS 1 James I, by an unknown artist. Oil painting on panel, 41.2×33cm, (?)1579. Scottish National Portrait Gallery, Edinburgh (PG 682). Photograph: National Galleries of Scotland

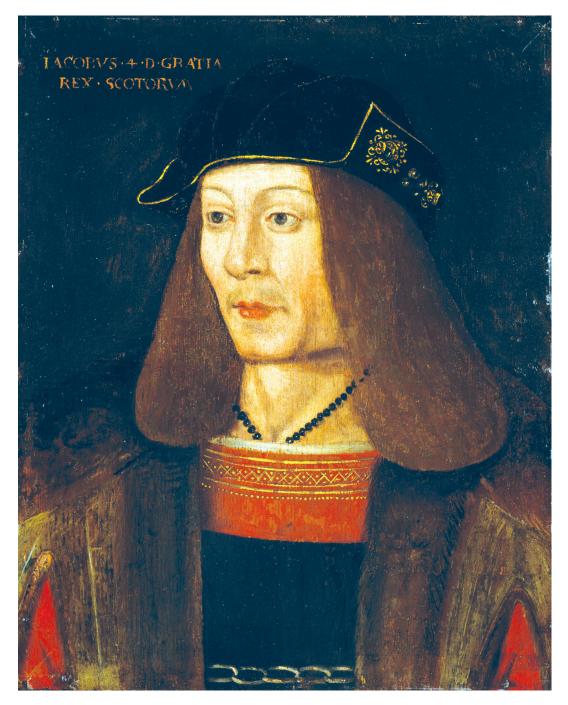
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ILLUS 2 James II, by an unknown artist. Oil painting on panel, 41.3 × 32.9cm, (?)1579. Scottish National Portrait Gallery, Edinburgh (PG 683). Photograph: National Galleries of Scotland



ILLUS 3 James III, by an unknown artist. Oil painting on panel, 40.8 × 32.7cm, (?)1579. Scottish National Portrait Gallery, Edinburgh (PG 684). Photograph: National Galleries of Scotland



ILLUS 4James IV, by an unknown artist. Oil painting on panel, 41.2×33cm, (?)1579. Scottish National Portrait Gallery,
Edinburgh (PG 685). Photograph: National Galleries of Scotland

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ILLUS 5 James I. Drawing in red and black chalks on paper cut out and pasted onto a separate sheet, 42×28cm, from the *Recueil d'Arras*: copy by Jacques Le Boucq, *c* 1560, after a lost painting by an unknown artist, 1430s. Bibliothèque-Médiathèque, Arras (MS 266, f21r) (Châtelet 2007)

Netherlandish style. Here, then, in all probability, is James I as he looked at the age of about 40.⁵ The drawing, done in red and black chalks, preserves the appearance of a detailed depiction of the sitter. The short 'pudding-bowl' haircut, the clean-shaven jaw and the round-necked gown with a fur collar, all of which are authentic for a date during the 1430s, are clearly different from what we see in the *James I* from the Edinburgh set; likewise, the very particularised face, with its retroussé nose, prominent mouth and sharply receding forehead, is far from being consistent with that in the Edinburgh painting.

In a similar way, the James II can be compared with a miniature painting, inscribed Jacob von gots genaden küng von Schottland, which occurs in The Diary of Jörg von Ehingen (Illus 6). The author of The Diary, which is not in fact a journal but a retrospective account of the extensive travels he had undertaken in his youth, was a German knight whose home was the castle of Kilchberg, near Tübingen. He evidently visited the court of James II in 1458, but it was only after a number of years - perhaps 20 or more - that von Ehingen wrote his memoir and had it illustrated with miniature paintings of the nine rulers he had met personally on his travels.⁶ The painter of the figures was presumably a local German artist and, as I have suggested elsewhere, the individuality of almost all of the 'portraits' may in fact be due to verbal descriptions supplied by von Ehingen.⁷ The figure of James II does not provide as detailed a record of his face as does the Recueil *d'Arras* drawing of his father. Nevertheless, here again is a man with authentically short hair, and the red birthmark which caused James II to be described as the king with 'the fyre mark in his face' is unmistakably shown, covering the whole of the left side of his face. For this latter feature not to appear at all in the James II painting is an extraordinary omission.8

If, then, the images of James I and James II presented in these paintings are not authentic, how is their appearance to be explained? A third comparison makes it possible to suggest a time of origin for their costumes and hairstyles. The small round hats seen in both images, the shoulder-length hair and the broad ermine collar of the gown in the *James II* are all paralleled in

a portrait of the Netherlandish nobleman Adolph of Cleves, lord of Ravenstein (Illus 7). This portrait, attributed to the anonymous 'Master of the Portraits of Princes', can be dated to the late 1480s or early 1490s: the sitter, born in 1425, died in 1492. Adolph of Cleves, a grandson of John the Fearless, duke of Burgundy, served the Burgundian dukes as one of their ablest councillors and military commanders, and another portrait attributed to the same artist shows Philip the Fair (born in 1478) as a boy of perhaps ten years of age with the same length of hair and in a very similar costume.9 In a further work by this artist, a portrait identified as depicting a member of the Bossaert family of Brussels, the sitter wears a doublet where the front opening is laced together similarly to that seen in the James I; the doublet is also worn beneath a gown or jacket in both paintings.¹⁰

On this evidence, therefore, the images of the first two Jameses cannot have originated before about the late 1480s - almost 30 years after the death of James II, and 50 years after the death of James I. The style of the costumes would not have seemed unduly inappropriate in geographical terms as the fashions shown here were not specifically Netherlandish but were worn at royal and princely courts throughout western Europe. It does need to be added that, in the two late 16th-century paintings under discussion here, the costumes have almost certainly been somewhat elaborated. Most noticeably, there are too many hat-jewels. It will be seen that in the hat worn by Adolph of Cleves there is a single jewelled brooch. This feature is paralleled in a number of other portraits of the period: it occurs, for example, in the arch-topped portraits of Edward IV and Richard III belonging to the Society of Antiquaries of London, early copies of lost originals painted probably in 1483.11 Contemporary instances of such hats with a series of jewels all the way round the brim, as in the paintings of the Jameses, do not appear to be found. Along with this, the central opening in the brim of James I's hat, secured by a gold medallion-brooch, seems to be fanciful, and the authenticity of the gold piping on the edges of the hat brims must be regarded as doubtful. Then too there are the friezes of arabesques embroidered in



ILLUS 6 James II, by an unknown artist. Watercolour drawing on parchment, 21×16cm, from *The Diary of Jörg von Ehingen*, late 15th century (Letts 1929). Württembergische Landesbibliothek, Stuttgart (Cod hist qt 141, p 97)

gold on the borders of the scarlet body-garments. These again are most probably an inauthentic form of embellishment. It is evident that the portrait image of James IV (Illus 4), which is essentially authentic for a date during his reign, has been embellished in a similar way, with added

jewels and gold piping. (The embroidery depicted on the front of James IV's doublet, in a zig-zag pattern rather than arabesques, has a better claim to have originated in an authentic feature.)¹²

Following on from Caw's remarks about the date of this set of paintings, it was suggested by Duncan Thomson in 1974-5 that they could perhaps have formed part of the decoration of a triumphal arch which was made for the entry of James VI into Edinburgh in 1579. The evidence for this is circumstantial and derives from a combination of three factors. First, the triumphal arch in question is recorded as having had upon it 'the genealogie of the Kings of Scotland'. Then, the possibility that such a genealogy would have been pictorial, rather than simply consisting of inscribed names, is raised by the existence of paintings from a similar scheme dating from 1633. In that year Charles I made his triumphal entry into the Scottish capital and passed beneath an arch decorated with no fewer than 109 'portraits' representing

and V) still survive. Lastly, the bold and rather sketchy style of the set of paintings of the first five Jameses would be in accord with their having formed part of a decorative scheme of this kind.¹³ Alternatively, the paintings' primitive style does not necessarily exclude the possibility that



ILLUS 7 Adolph of Cleves, lord of Ravenstein. Oil painting on panel, 27×18cm, attributed to the 'Master of the Portraits of Princes', late 1480s or early 1490s. Private collection. Photograph: © KIK-IRPA, Brussels

the line of monarchs from the mythical Fergus I (reigned, supposedly, c 330 BC) onwards. The production of this latter series was entrusted to the artist George Jamesone, and 26 of the paintings (including images of James I, II, III

they may have been intended to serve the same kind of purpose as the sets of such portraits that were known in England towards the end of the 16th century, as interior decoration in the Long Gallery of a palace or some other great house.

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 ILLUS 8 James II, by an unknown artist. Oil painting on panel, 37×25cm, c 1592.
 Wittelsbacher Ausgleichsfonds, Munich (WAF B I a 421). Photograph: Bayerische Staatsgemäldesammlungen, Munich

In this context it is useful to consider a very similar set of portraits of Scottish monarchs which is much less well known. This set is currently divided between two locations in Munich: the portraits of the kings from James II to James V, and of Mary, Queen of Scots, are owned by the Wittelsbacher Ausgleichsfonds, while that of James VI is in the Bayerische Staatsgemäldesammlungen. Details of these paintings were only published in 2008, when it emerged that the set had once also included portraits of James I and of Anne of Denmark, wife of James VI (both last recorded in 1789). The set is first recorded in an inventory of the Kunstkammer of the dukes of Bavaria in their residence at Munich which was made $1598.^{14}$ The Munich in Kunstkammer had been built up from the mid-1560s onwards by Duke Albrecht V and his son Wilhelm V. It comprised an encyclopaedic collection of both natural and man-made objects, the latter including a very large number of portraits of both historical and living 'famous men', many of them conceived as sets. Unfortunately, there appears to be no evidence the circumstances as to in which the paintings of Scottish monarchs entered the collection, but it is interesting to note that the portrait of James VI bears the date 1592. The image of James in this painting, in which he is shown wearing a tall hat, is of a type that became current from 1590 onwards and seems to have originated in connection with his marriage to Anne of Denmark.15 The Munich portrait therefore provided

an up-to-date likeness of the king; and since the paintings of his ancestral namesakes are all of the same matching size, they were presumably produced together with the *James VI* in the early 1590s.

The Munich image of James II (Illus 8) differs somewhat from its counterpart in Edinburgh (Illus 2). Here the king is given a small beard and his costume would seem to have been derived from a slightly later source: both the round hat

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worn tilted at an angle and the distinctive square-cut fur collar of the gown are attested in visual sources dating from the mid-1490s onwards into the early 16th century.¹⁶ Interestingly, it is this latter image type of James II, rather than the Edinburgh image, that is reflected in the full-length miniature of him in the Seton Armorial, a manuscript inscribed with the date 1591.17 The figures of the Jameses in the Seton Armorial (though sadly that of James I is missing) provide our earliest securely dated visual evidence for the existence of these portrait images. Possibly the different image of James II that is seen in the Munich set and the Seton Armorial belonged to a tradition that was already established: it is worth bearing in mind that this image of James II also appears as the standard portrait type of him in later sets, both painted and engraved. Thus it is seen in the set of engraved plates in John Jonston's Inscriptiones historicae regum Scotorum, a book printed in Amsterdam for Andrew Hart of Edinburgh in 1602.18 Similarly, it appears in Renold Elstrack's single-



 ILLUS 9 James IV, by an unknown artist. Oil painting on panel, 37 × 25cm, c 1592. Wittelsbacher Ausgleichsfonds, Munich (WAF B I a 423).
 Photograph: Bayerische Staatsgemäldesammlungen, Munich

sheet genealogical print illustrating *The most* happy vnions contracted betwixt the princes of the blood royall of theis towe famovs kingdomes of England & Scotland (1603).¹⁹ And in painting, when George Jamesone came to decorate the triumphal arch, mentioned earlier, with portraits of the Scottish monarchs, his image of James II was again based on the same type.²⁰

Finally, a conjecture: comparing the Munich *James II* with the *James IV* from the same set (Illus 9), one is struck by the close similarity

between the two faces. This is evident both in the overall shape of the faces and in the disposition of the features, and particularly also in the mouths, which are virtually identical. In view of this, it seems possible to suggest that the face of the fictive *James II* was made up on the basis of the *James IV*. Such a borrowing of the grandson's features for those of his grandfather would have made plausible sense, not only in terms of family likeness but also in the historical fact that both of these kings were doughty warriors who had

notably strengthened the power of the monarchy within Scotland (and both had met an untimely death in war against the English). Turning to the Edinburgh set, the same kind of similarity can be seen to exist between the faces of the same two kings there (Illus 2 and 4). Moreover, in the latter set it seems equally possible that the face of the fictive James I was made up on the basis of the James III (Illus 1 and 3). The possible borrowing in this instance is more heavily disguised: James I has been given a full beard, which probably also accounts for his slightly different jaw line, and his nose has a bulbous tip. Nevertheless, the similarity between the two long, narrow faces with their large and widely spaced eyes remains very evident, and the way in which the hair at the nearer side of the face hangs like a curtain over the corner of the eye in both paintings is surely not coincidental. And again, these two kings, grandfather and grandson, were linked by historical similarities: both were unusual for the interest they had shown in the arts, and especially for their patronage of architecture; both had dealt high-handedly with the Scottish aristocracy, giving rise to accusations of tyranny; and both had ultimately fallen victim to plotting by disaffected nobles.

By the time the Edinburgh Jameses were painted (whether this was in 1579 or a few years later), a widespread popular interest in sets of portraits of rulers was reaching its peak. In northern Europe, at any rate, the painted portrait sets that appeared in royal and noble houses can be seen as a natural development from the medieval tradition of decorating palaces, cathedrals and other important buildings with series of images of rulers in the monumental media of sculpture, stained glass and wall painting. However, a crucial additional impetus had been provided by the enormous collection of portraits of famous men which was assembled by Paolo Giovio (1483-1552), bishop of Nocera de' Pagani, and displayed in a specially built museum-villa on the shores of Lake Como. Knowledge of Giovio's collection was disseminated throughout Europe by his description of it, with eulogies reflecting the biographical notices that were placed beneath the portraits, published in numerous editions from 1546 onwards. Probably taking his cue from the Ancient Roman author Pliny the Elder, Giovio emphasised that the paintings he commissioned were true likenesses, copied from authentic sources which he had sought out for the purpose.²¹

The published editions of Giovio's work evidently also influenced the production of books containing series of portraits in engraved form. One such is the *Recueil des Effigies des Roys de France*, published in Paris and Lyon in 1567. In his preface to the Paris edition, the publisher François Desprez claims that he too has been at pains to find true likenesses:

I have wished very much to search for the best known figures that portray them, from Pharamond, the first king, down to Charles IX who reigns at present, and to represent them as close to the life as possible, according to what I have been able to discover, as much by means of the tomb effigies of those kings as in many other places, where I had ascertained the genuineness of the portrait.²²

In view of this statement, it is surprising to find that the first image in Desprez's series that can be related to an authentic source is that of Charles VII (reigned 1422-61): all of the preceding 53 kings are represented by fictive images. For the most part these are adapted from those in earlier printed sets, though in borrowing the images Desprez by no means always used the same figure for the same king. Presumably he regarded such sources as in some way giving a truer, as well as a more distinctive and memorable, impression of these kings than the tomb effigies which were available in churches in and around Paris, to which he appears to have had little if any recourse at all.23 Be this as it may, it is interesting to note at least one instance here of the kind of historical parallelism that I am suggesting may have been at work in the portraits of the Jameses. The made-up image of Pharamond, the supposed founder of the French monarchy, is virtually repeated for the figure of Hugh Capet, the first of the Capetian line of kings. In Capet's case the head is turned from three-quarter view into profile and given a crown decorated no longer with pointed rays (as an 'antique' crown) but with fleurs-de-lis; the body, with heavily embossed armour and a sword held



ILLUS 10 Edward V, by an unknown artist. Oil painting on panel, 57.8×44.4cm, *c* 1597–1618. © National Portrait Gallery, London (NPG 4980 (11))



ILLUS 11 Edward VI, by an unknown artist, after Guillim Scrots. Oil painting on panel, 57.2×44.5cm, c 1585– 1600. © Reproduced by permission of the Marquess of Bath, Longleat House, Warminster, Wiltshire, Great Britain

upright in its right hand, is the same – literally so because it is printed from the same block as the body of the Pharamond image, in which the head and body were separate blocks.²⁴

Thirty years later, in England, an author identifying himself only as 'T. T.' (most probably the antiquary Thomas Talbot) produced A booke, containing the true portraiture of the countenances and attires of the kings of England ... (Talbot 1597). The engravings printed in this work represent all the English monarchs from William I (reigned 1066-87) to Elizabeth I (reigned 1558–1603), and it is evident that T. T. engaged in some antiquarian research in order to make the images as authentic as possible. As Catherine Daunt has suggested, the image of King Stephen (reigned 1135-54) may have been derived from the figure of that king drawn by Matthew Paris in his manuscript Historia Anglorum (c 1250), and those of at least Henry III and Edward III seem to have been based on their tomb effigies.²⁵ For the monarchs from Richard II onwards, T. T. used the standard images that were already available in painted sets, most of which reflected (at however many removes) contemporary painted portraits. Exceptional in this respect were Henry IV and Edward V, for neither of whom there existed an authentic painted portrait source. For the former, T. T. resorted to an accepted stand-in, adapted from the image of Charles VI which appears in Desprez's series of French kings, and for Edward V his illustrator devised a plausible figure of a curlyhaired child. An alternative solution to the problem of supplying an image of Edward V, and one which is again relevant to the question of the Jameses, is seen in a painted set which belongs to the National Portrait Gallery in London and was formerly at Hornby Castle, the seat of the dukes of Leeds.26 This set is interesting partly because its first six portraits (William I, Henry I, Stephen, Henry II, John and Henry III) seem to be based on the engraved images in the T. T. series. This is not the case, however, with the Edward V (Illus 10). For his image of the boy-king who reigned briefly and in name only at the age of 12 in 1483, the artist evidently turned to an existing portrait of Edward VI, who reigned from 1547 to 1553, between the ages of nine and 15. This appropriation of the later boy-king's likeness is clear enough if one compares the *Edward V* with a typical example of the standard portrait image of Edward VI which was used in painted sets (Illus 11): a significant degree of similarity is evident both in the shape of the face and in the disposition of its features, and especially in the distinctive slanting form of the ear. Here, therefore, is a parallel for the kind of retrospective reuse of a likeness that I am suggesting may have taken place with the portraits of the Jameses – and here too the borrowing is disguised by the invention of a different costume.²⁷

To return, then, to the conjecture proposed here: if it is right, it means that the images of the first two Jameses cannot go back any further than the creation of the portrait image of James IV. This latter is datable, with a fair degree of probability, to the period 1503-8. Prior to his marriage to Margaret Tudor on 8 August 1503, James IV is known to have worn a full beard: it was removed, famously, by two of his wife's English ladies on the day after the wedding. Then, his portrait is likely to have been the work of one or other of two visiting Netherlandish painters, either 'Mynour' (Meynnart Wewyck), who left Scotland before 10 November 1503, or 'Piers the painter', who worked at the Scottish court from 1505 until 1508.28 Might a set of pictures of the early Jameses - the prototype for the later series - also have been painted by one or other of these two artists? This is a possibility, though it seems more probable that such a set would have originated at a later date, retrospectively and with a greater historical sense of the similarities between James IV and his grandfather. Thus the images of the first four Jameses may not have been created as a set until a portrait of the fifth James could take its place alongside them. Presumably the set was created in honour of a monarch whose name was James, with the aim of celebrating him as the direct descendant of all his predecessors of the same name, and the king in question may indeed even have been James VI, who came to the throne at the age of 13 months in 1567.

The exact sources of the costumes in the images of James I and James II can only be a matter of surmise: they could have been discovered in portraits of individuals, either in the form of paintings or as drawings copied from paintings, or possibly in figures that occurred in manuscript illuminations or in tapestries. Whoever the artist was who found them and recognised their usefulness for his purpose, he deserves to be credited with a degree of ingenuity which over time enabled his fictitious images to gain acceptance as true likenesses. Writing in 1658 of the series of Scottish monarchs painted by Jacob de Witt for the Palace of Holyroodhouse, a series in which a number of the images depend on Jamesone's series of 1633, Sir John Lauder of Fountainhall remarked that 'in our gallery of the Abbey their is set up the pictures of our hundred and eleven Kings since Fergus I ... They have guessed at the figure of ther faces before James the I'.²⁹ It is my hope that the observations offered here may have revealed at least the essence of the truth behind the images of the first two Jameses.

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I should like to dedicate this article to the memory of my parents, Frederick and Mary Hepburn, with whom I first saw the portraits of the first five Jameses at the Scottish National Portrait Gallery.

NOTES

- 1 Accession nos PG 682, 683, 684, 685, 686; Thomson 1975: 20–1, nos 2–6; Smailes 1990: 156.
- 2 Caw 1909–10: 114–15 (quotation from 115).
- 3 The point has been well made that the likeness of James III as depicted here bears a close

resemblance to his portrait on the extraordinary silver groats that were issued in c 1485: see, for example, Thomson 1974: 100 and pls 65-6. The idea that these two images are related is considerably strengthened by the fact that the clothing at the king's neck is the same, and one is very much inclined to suppose that both ultimately go back to a single lost contemporary drawing. The imperial crown worn by James in the coin image would have been substituted for the more usual type of 'civilian' headgear that was presumably shown in the lost drawing and is reflected in the painting. The tall-crowned hat with an ostrich plume curling over from the back is paralleled in French and Netherlandish miniatures of the 1470s, but seems not to have been fashionable after c 1480; taken together with this, the narrow, steep-sided lapels of the king's gown or jacket point to the late 1470s as the image's likely date of origin. For the image of James IV, see the references in note 12 below, and further below in the text of the present paper; and for the image of James V, Millar 1963, text volume: 77, no. 92. The likeness of the latter king, particularly as regards the length and shape of his nose, is paralleled in his (profile) portrait on the gold ducats known as 'bonnet pieces' that were issued during the years 1539-42; here too, as in the painting, he wears a heraldic collar of thistles (see Burnett 1996: 291 and fig 3, opp 302; Thomas 2005: 178, 180 and pl 16). The style of James' costume in the painting is consistent with the same date, c 1540, and since an example of the painted image occurs in a double portrait of James V and Mary of Guise (collection of the Duke of Atholl, Blair Castle; reproduced Marshall 1986: 8), it is possible to suggest that it may have originated at about the time of the couple's marriage in 1538.

4 Of the 279 drawings catalogued and reproduced in Albert Châtelet's splendid complete edition of the *Recueil d'Arras*, Châtelet draws attention to about a dozen portraits in which the inscription can be shown to misidentify the sitter. In all but two of these instances the mistake is a 'near-miss', in which (for example) a father is misidentified as his son. It has sometimes been supposed that the drawing inscribed as a portrait of Margaret Tudor, wife of James IV, comes into this category and represents the sitter's mother, Elizabeth of York (a suggestion first made by Charles R Beard and subsequently upheld by Roy Strong (Beard 1925: 8, 10-13; Strong 1969a, vol I: 98)). However, while Margaret's costume is undoubtedly similar to that which appears in the standard portrait image of Elizabeth of York (for an early example of which, in the Royal Collection, see Millar 1963, text volume: 52, no. 17; plate volume: pl 6), her figure is significantly narrower and slighter; and a drawing of Elizabeth, now missing, is recorded as having once been in the Recueil d'Arras, occupying the folio immediately after the one with the drawing of Henry VII (Châtelet 2007: 24 (fol 15: Isabelle d'Angleterre femme de Henri VII)). With regard to the drawing of Jacques Roy descoce, this certainly belongs together with the other 'Scottish' portraits in terms of its technique, being mostly done in red chalk with some initial outlining in black.

- 5 Campbell 1996: 89–90. Châtelet identifies the Scottish king shown here as James II, portrayed in the lost original work at about the age of 18 by an artist from the circle of Rogier van der Weyden (Châtelet 2007: 108–9). However, it is surely difficult to believe that the sitter was as young as this; and the portrait reflected in the drawing would seem to have had a closer affinity with the work of van Eyck than of van der Weyden. There is also no hint here of James II's famous birthmark, for which see note 8 below.
- 6 Letts 1929: esp 62-3; Ehrmann 1982.
- 7 Hepburn 1986: 49–50 (in connection with the figure of Henry VI of England). Of the nine rulers represented, only the figure of Ladislaus 'Postumus', king of Hungary and Bohemia, can be seen to be related to larger-scale painted portraits; also, this figure is depicted in a different style from the others.
- 8 For James' birthmark see McGladdery 1990: 1-2, quoting from the Auchinleck Chronicle and referring also to the von Ehingen miniature. The birthmark would have presented a problem in the creation of any official portrait image of James, as a disfigurement of this kind would have been viewed by contemporaries in a negative way, as an outward sign of some inner flaw of character and a mark of God's disfavour. For this aspect of medieval thought, see Strickland 2003: 49-50 (on Cain's misshapen progeny), 65-7 (on the perceived link between physical deformity and sin, originating from Leviticus 21:16-24). Rather than trying to gloss over so obvious a feature, a portrait painter would most probably have resorted to the expedient of showing the king in

profile from the other side. Actual examples of this practice have survived from 15th-century Italy in portraits of the rulers Sigismondo Malatesta, lord of Rimini, and Federico da Montefeltro, duke of Urbino: the former had a protruding bone on his upper right cheek, while the latter had lost his right eye in a jousting accident: see Woods-Marsden 2002: 98–9, 111, 235 n 108, and pls 3, 5, 25, 27.

- 9 For the portrait of Adolph of Cleves, see Pauwels 1962: 109–11, no. 29, and for the 'Master of the Portraits of Princes', most recently, Bücken & Steyaert 2013: 224–45, reproducing both portraits mentioned here on 226. The portrait of Philip the Fair (Musée du Louvre Inv RF 1969–18) is on loan to the Musée de la Chasse et de la Nature, Paris.
- 10 For this portrait, formerly in the National Museum at Poznań and now in a private collection, see Périer-D'Ieteren 1986.
- 11 LDSAL 320 and 321: Franklin, Nurse & Tudor-Craig 2015: 54–66, nos 5 and 6.
- 12 For the portrait image of James IV, see Beard 1925; Châtelet 2007: 191, and further below in the present paper. It seems less likely that the image of James III has been elaborated: each of the two hat-jewels shown there is worn on a separate item of headgear, and there is no reason to suppose that this is inauthentic.
- 13 Thomson 1974: 65–7, 95–101; Thomson 1975: 20–1, 63–4. No attempt has yet been made to date this set of paintings using dendrochronology.
- 14 Diemer et al 2008, vol II: 914–19, nos 3039–42, 3045–8. The portraits of James II, III, IV and V are described there, erroneously, as being lost.
- 15 See Marshall 1990: 52–3, illustrating a silver medal struck to commemorate the royal marriage (fig 51) and companion portraits of James and Anne dated 1595 (fig 52). For an earlier portrait image of James, in a painting dated 1586, see Thomson 1975: 26, no. 12. James and Anne were married in Norway on 23 November 1589 and they returned via Denmark to Scotland, disembarking at Leith on 1 May 1590.
- 16 The earliest example of the square-cut collar that I am able to find occurs in the gown worn by the figure of Hercules in a miniature in the presentation manuscript of Olivier de la Marche's *Mémoires* of 1494 or 1495 (Paris, BnF, MS fr 2868, f18r: see Buren 2011: 260–3, B.91). Examples of the round hat tilted at an angle are worn by several of the ultra-fashionable courtiers

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depicted in the well-known miniature showing the Dance of Sir Mirth on f14r of a copy of the *Roman de la rose* (BL Harley MS 4425) made in Bruges in *c* 1490–1500: see Kren & McKendrick 2003: 401–3, no. 120. For both of these costume features see also an early 16th-century tapestry from the southern Netherlands showing a court scene with an enthroned prince surrounded by courtiers, Amsterdam, Rijksmuseum, BK-NM-9192 (Hartkamp-Jonxis & Smit 2004: 51–3, no. 11).

- 17 For the *Seton Armorial* (Sir Francis Ogilvy of Inverquharity Bt, on loan to the National Library of Scotland, Acc 9309 (SN266)), see Thomson 1975: 33, no. 24; Findlater 2006: 67. The folio with the figures of James II and his queen is reproduced in McGladdery 1990: opp 86.
- 18 See Hind 1955: 49–51, pl 20; Thomson 1975: 70, no. 73.
- 19 Hind 1955: 209-10, pl 5.
- 20 Thomson 1974: 96, no. 43, pl 70. There is some limited evidence to suggest that other late 16thand early 17th-century painted sets once existed. A group of portraits of James II, III, IV, V and VI is recorded, interestingly, in an inventory of the possessions of Mary, Queen of Scots made at Chartley in 1586: see Labanoff 1844, vol VII: 248. Four portraits which were formerly in the collection at Castle Fraser, Aberdeenshire, showing James III, James V, Mary, Queen of Scots and James VI, were probably remnants of a similar set, or perhaps of more than one set (The New Gallery 1889: nos 7, 13, 14 and 24). The present whereabouts of the portraits are unknown although there are photographs in the Scottish National Portrait Gallery archive. The image of James V in this group is virtually identical to that in the Munich set, and the James VI is inscribed as showing him at the age of 24 in 1591. A painting of James I in the Scottish National Portrait Gallery (PG 337), traditionally said to have been given by Anne of Denmark to her chamberlain, Sir Henry Wardlaw of Pitreavie, may also have come from a set (Caw 1909-10: 116; Smailes 1990: 156); and the same is possibly true of a painting of James III which was exhibited in London in 1931 by permission of the trustees of the then recently deceased Sir Archibald Buchan-Hepburn of Smeaton (Shirley 1931: 147, no. 1138, pl 39). To the best of my knowledge, there is no other surviving example of such a painting of James II.

- 21 Strong 1969b: 46; Haskell 1993: 43–51; Goldring 2014: 195–9.
- 22 Recueil des Effigies des Roys de France 1567 (no page nos): 'Au lecteur, salut. ... i'ay bienvoulu faire vne recherche des plus notables figures protraictz diceux depuis Pharamond premier Roy, iusques à Charles neusiesme [sic] apresent regnant, & iceux representer au plus pres du naturel que m'a este possible: selon ce que i'ai peu recouurer tant par le moien des effigies representées es sepultures desdictz Roys, que en plusieurs autres endroictz, ou iay congneu la nayueté du protraict.'
- 23 For the sources of Desprez's images, see Baydova 2013: 25-7, 34-7. In fact he seems to have depended mainly on the series of French kings which is included in the Promptuaire des medalles des plus renommees personnes qui ont esté depuis le commencement du monde, published by Guillaume Roville [Rouillé] at Lyon in 1553; the relevant images there were in turn based for the most part on those in a much earlier work, Les Anciennes et modernes genealogies des Roys de France, published by Jacques Bouchet at Poitiers in 1528. For an instructive discussion of the authority accorded to the images in earlier printed sets, made up as they were in conformity with what was known of each king's character and age as well as with some idea of ancient costume, see Perkinson 2002.
- 24 Baydova 2013: 31, 33, with figs 8–9. As Baydova also points out, the head of the figure of Pharamond (who supposedly reigned in the early 5th century) seems to have been derived from that of Henry of Flanders, emperor of Constantinople (reigned 1206–16), in the *Promptuaire des medalles* (see previous note).
- 25 Daunt 2015, vol I: 60–1; vol II: 160–6. It could be argued that the *Richard I* might have been derived from his figure in the same group of kings in Matthew Paris' *Historia Anglorum* (London, British Library, Royal MS 14 C vii, fols 8v–9, for which see McKendrick et al 2011: 338–9, no. 114). On the other hand, it seems doubtful that the bearded *Henry II* was, as suggested by Daunt, based on that king's tomb effigy at Fontevrault, as the effigy there which is normally regarded as his shows a clean-shaven face.
- 26 NPG 4980 (1–16). See Gibson 1976; Daunt 2015, vol I: 118–23; vol II: 46–54; National Portrait Gallery.

- 27 Unfortunately, although it is very likely that the National Portrait Gallery set once included a portrait of Edward VI, this has not survived. The painted set at Longleat, to which the portrait of Edward VI illustrated here belongs, also has an *Edward V*, and it was in this context that Pamela Tudor-Craig first proposed the idea of the reused likeness: see Gibson 1976: 85–6 with figs 18–19. As Catherine Daunt has remarked, a figure of Edward V looking like Edward VI was already present in Gyles Godet's *A brief abstract of the genealogie of all the kynges of England*, an engraved series datable to *c* 1560–2 (Daunt 2015, vol I: 103; vol II: 149–53).
- 28 Beard 1925: 7; Campbell 1996: 90-1.
- 29 Thomson 1974: 100, quoting from Lauder of Fountainhall 1840: 156.

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John Stuart, Duke of Albany and his contribution to military science in Scotland and Italy, 1514–36: from Dunbar to Rome

Bryony Coombs*

ABSTRACT

John Stuart, Duke of Albany was born in France, but acted as regent of Scotland from 1514 until 1524. He visited Scotland three times and, in the early years of his regency, is credited with bringing a degree of stability back to Scottish governance during an otherwise troubled political period. Albany was also noteworthy for his love of visual splendour and magnificence. In France, he was an astute patron of the visual arts, commissioning a number of important manuscripts and architectural projects, such as the Sainte-Chapelle at Vic-le-Comte in the Auvergne. Albany's main architectural achievement in Scotland was the fortification and extension of his principal residence, Dunbar Castle, in the form of a great artillery blockhouse: perhaps the first such structure to have been built in the British Isles. The plan of the blockhouse appears to follow the basic form of a contemporary Italian angle bastion. The fortification earned a formidable reputation during this period, contemporary commentators noting that it was impregnable.

Further evidence supporting the idea that Albany was greatly interested in Italian developments in military science comes in the survival of a working sketch, now held in the Uffizi, Florence, which bears a note in the writing of the famed military architect, Antonio da Sangallo the Younger, that it was undertaken 'following the opinion of the Duke of Albany'. The sketch shows a square fort protected by a ravelin. The purpose of this paper is to investigate the relationship between these two pieces of evidence, to investigate what they tell us of Albany and of his interest in military science, and to demonstrate how such ideas were introduced into Scotland and then fed back into architectural and military discourse on the Continent.

ALBANY: HIS EARLY MILITARY CAREER

John Stuart, Duke of Albany was born in the Auvergne in 1482. He was the only son of Alexander Stuart, the younger brother of King James III of Scotland. Albany entered the court of Charles VIII at a young age, likely in 1494, as he later remarked that he had served French monarchs since he was 12 years of age.¹

During Albany's early career he played a distinguished role in Louis XII's Italian campaigns, which resulted in the conquest of Milan and the recapture of Naples. In September 1499, Louis XII invaded Lombardy, and in three weeks it had been conquered along with the city of Genoa. The 17-year-old duke of Albany was among the French nobles who then accompanied their king when he triumphantly entered Milan. In 1501 Albany took part in a crusade to the eastern Mediterranean and distinguished himself in an attack on the Aegean island of Mytilene.² Jean d'Auton noted that 'The Duke of Albany similarly found himself hand-to-hand with another Turk, whom he vigorously defeated and quelled'.³ On the return voyage in December his ship

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was wrecked. Fortunately, Albany and his companions were rescued by a Venetian barque, which transported them to Corfu, allowing them to then sail home.⁴ In the following year, aged 20, Albany was appointed captain of 100 lances des ordonnances du roi garrisoned at Bordeaux, and in 1503 he returned to campaigning in Italy, where he participated in the Battle of Garigliano against the Spanish.⁵ In 1505 Louis XII arranged for Albany's marriage to his first cousin, Anne de la Tour, a rich heiress to the comte de Boulogne and d'Auvergne.⁶ The marriage took place on 13 July 1505. When Louis invaded Italy again in 1507, Albany was present in the army, preceding the king when the latter entered Genoa on 28 April.7

The great turning point in Albany's career took place on 9 September 1513, when James IV was killed at Flodden, leaving an infant James V as his successor.⁸ In the immediate aftermath, on 19 September, the lords of the council arranged for the coronation of the infant James V at Stirling and to appoint his mother, Margaret, as guardian of the king and regent of Scotland. Albany was the heir presumptive, and in November that year parliament sent ambassadors to Louis XII to remind him of the ancient alliance between France and Scotland.⁹ Louis had already agreed that Albany should travel to Scotland, declaring on 4 October

as to the fourth article desiring the King to send the Duke of Albany to Scotland, as having right to the government and regency, he answers that he is willing because Albany is capable of it, although the Duke is much employed in his wars. Yet he will send him because he values the young King's affairs as his own.¹⁰

On 6 August 1514, however, Margaret Tudor married Archibald Douglas, sixth earl of Angus, prompting the lords of the council to declare that she should relinquish the regency. On 18 September an invitation was sent 'to my lord duk of Albany governor of Scotland to cum hame in this realme of Scotland in all possible haist for the defence of the samin and for gud reule to be put and kepit in the said realme in all partis'.¹¹ Albany was also requested to ask the French king for material help.¹² Less than three months later, Louis was dead, succeeded by Francis I, by whom Albany was evidently perceived as a useful diplomatic pawn to be deployed, distracting the English at home, while he invaded Italy.¹³ So, on 3 July 1515 the lords of the council recorded 'that ane excellent and mychti prince Johnne duke of Albany, governour and protectour of Scotland and tutour to the kingis grace to his perfite age, arivit in the said realme the XVIII day of May'.¹⁴

Albany visited Scotland three times over the course of his regency: May 1515-June 1517; November 1521–October 1522; and September 1523-May 1524. His first visit is generally considered the most successful, during which time he brought a degree of stability back to Scottish governance. Albany's friend and representative, Antoine d'Acres, seigneur de la Bastie, travelled to Scotland in late 1513. He received, in Albany's name, the important fortress of Dunbar, part of the Albany property which belonged to the family through the Earldom of March and which had been confiscated when Albany's father had been banished by James III.¹⁵ When Albany arrived at Dumbarton on 26 May 1515, a squadron of eight ships accompanied him. 'The peers and chiefs crowded to his presence; and his exotic elegance of manners, his condescension, his affability, and his courtly deportment, won all hearts.'16 During Albany's time in Scotland he made Dunbar Castle his principal base where he was allowed, under the terms of his regency, to keep a French garrison. Indeed, in terms of Albany's patronage of architectural projects in Scotland, Dunbar Castle was the key focus for his building activities. Albany was a prolific and important patron of artistic and architectural projects in France, yet little consideration has been paid to his innovations in Scotland. However, as Iain MacIvor has pointed out, the castle and fortifications at Dunbar possess a most elaborate and ingenious plan.¹⁷ The purpose of this paper is, therefore, to examine Albany's architectural and military innovations at Dunbar through the physical and literary evidence that survives, to examine what may have inspired these innovations, and to relate this to further unexplored material documenting Albany's



ILLUS 1 Map of the British Isles with Dunbar Castle highlighted (Cotton Augustus I. i. 9, c 1535) (© The British Library Board)

relationship to developments in military science on the Continent.

DUNBAR CASTLE AND ARTILLERY BLOCKHOUSE: THE PHYSICAL EVIDENCE

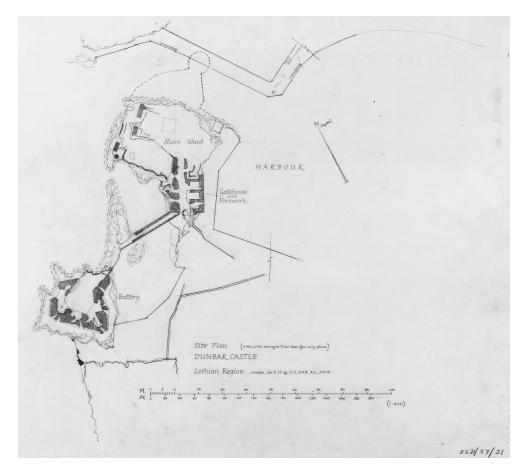
The strategic importance of the position of Dunbar Castle is clear. The castle covered the most convenient landing place on the Scottish east coast beyond Berwick (Illus 1).¹⁸ As Grose noted 'it was long deemed one of the keys of the kingdom'.¹⁹ After Berwick finally became English in 1483, the importance of Dunbar as a defensive fortress was greatly intensified. The remains of the castle may be understood as the result of four principal building campaigns: an older medieval castle used by the earls of March, a later medieval castle built there for

James IV from 1496 to 1501, work undertaken by Albany between 1515 and 1523 (including the construction of a formidable artillery blockhouse), and lastly, further strengthening work undertaken in 1544–7 by Migliorino Ubaldini.²⁰ The castle was deliberately demolished, by order of the Parliament of Scotland, in December 1567.²¹ The principal concern of this paper is the work undertaken for Albany during his tenure as regent.

On an exposed site, the fragmentary remains of the castle are scattered on a rock standing approximately 80 feet above the sea (Illus 2). The physical remains of the building described in the literature are identifiable. To the south-west of the structure built, or repaired, for James IV, a great blockhouse stands on the neighbouring island-like promontory (Illus 3). The blockhouse was originally joined to the castle by a substantial traverse wall built across a tidal chasm. The wall contained a roofed-in passage and above there

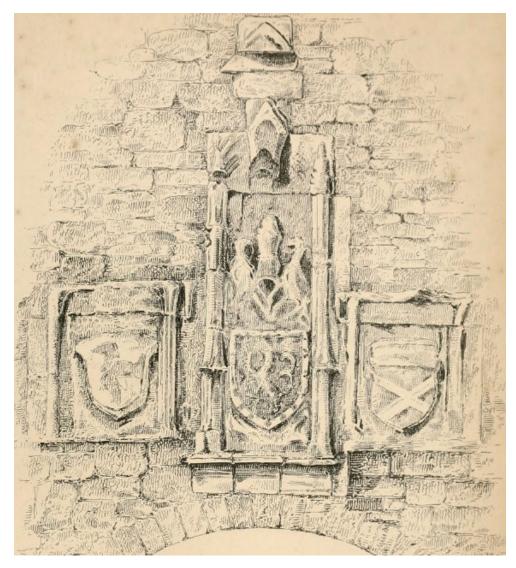


ILLUS 2 Oblique aerial view of Dunbar Castle, taken from the south, showing the blockhouse, remains of the traverse wall, forework and part of the main castle enclosure, DP 135194 (© Historic Environment Scotland)



ILLUS 3 Dunbar Castle: a general plan showing the relationship of the blockhouse, forework and main castle buildings, SC 761525 (© Historic Environment Scotland)

probably existed a rampart walk.²² This structure provided protected communication between the castle and the blockhouse. Unfortunately, a large section of the remains of the main castle buildings have been lost to a cleft providing an entrance to the new harbour. These are indicated on the plan by a dotted line.²³ The remaining ruins appear to be those of a castle, with a gatehouse and walled enceinte. Miller, in 1830, gave the dimensions of the body of the buildings as 165 feet (east to west) by 207 feet (north to south).²⁴ The gatehouse includes a number of gunloops which date to the rebuilding work undertaken for James IV c 1496.25 Both Grose and Miller, in their illustrations, show the curtains terminating in salient circled towers, which Miller notes had communication with the sea.²⁶ The natural defences of the promontory have been augmented with the building of a massive wall of red sandstone, which forms the side of the gatehouse. For most of its height, this wall acts as a shell of masonry around solid rock. Other areas of facing masonry survive around the headland, indicating that the augmented natural defences went all the way around the site. In 1868 Henry C Pidgeon published an account of a series of armorial plaques that were displayed above a surviving gateway, apparently to the principal apartments (Illus 4).²⁷ The plaques were greatly eroded even by this time, however, the published sketch survives as important evidence of this now lost decorative feature; the gateway and



ILLUS 4 Sketch of the armorial plaques over the entrance to the main apartments at Dunbar Castle, now destroyed (Pidgeon 1869: 344–5)

armorial decoration were subsequently destroyed in a storm on 21 October 1869.

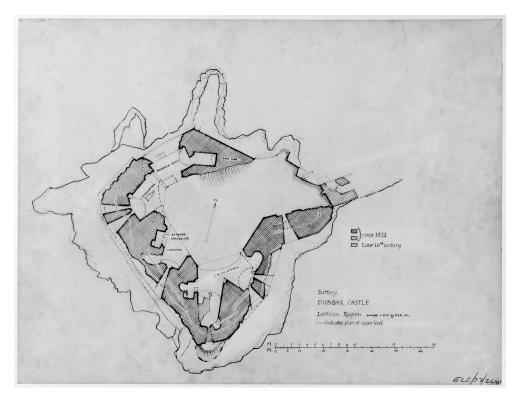
The central shield bore a lion rampant within a bordure of roses, for Dunbar. On the left were the three legs for the Isle of Man; on the right, a saltire and chief, for the lordship of Annandale. It was not easy for Pidgeon to interpret the decayed state of the sculpted forms surmounting the three plaques, however, this appears to have included two supporting beasts, perhaps a crest, and fragments of an ornamental canopy. Pidgeon argued that the plaques corresponded to the arms of George, the tenth earl of Dunbar and March. This interpretation has been uncritically accepted by scholars thereafter.²⁸ It is, however, flawed on a number of counts. In 1487 Dunbar Castle was annexed to the Crown, and in 1488 ordered by Parliament to be 'cassyne doune and alutterly distroyit in sic wise that ony fundment tharof be occasioun of biging nor reparcione



ILLUS 5 The seal of John Stuart, Duke of Albany (British Library, Add Ch 1525. 1 June 1517) (© The British Library Board)

of the said castell in tyme to cum'.²⁹ When war occurred in 1496, James IV found it advisable again to reconstruct a castle at Dunbar. This was apparently completed in 1501.³⁰ If the castle buildings were 'alutterly distroyit' it is unlikely that a prominent piece of heraldic ornamentation over the central gateway would have been preserved. If the plaque was erected during the period of rebuilding for James IV it is not likely that it would have born the arms of the tenth earl of March.

The heraldic elements described by Pidgeon, furthermore, relate to those on the arms of John Stuart, Duke of Albany: Dunbar, the earl of March, and the earl of Annandale were the principal components of his heraldry (Illus 5).³¹ Furthermore, by comparing the armorial plaques to Albany's seal, similarities can be drawn between the supporting bears and the supporting



ILLUS 6 Dunbar Castle: A plan of the blockhouse. The cross-hatching shows surviving masonry, SC 761519 (© Historic Environment Scotland)

figures observed in the damaged section of the carved plaque.³² The decorative feature as a whole is consistent with early 16th-century decoration of this type and it appears, therefore, to the author, that it was most likely a decorative addition dating to Albany's regency.³³

The blockhouse at Dunbar Castle is largely inaccessible now that the connecting passage has collapsed. It was a fortification designed exclusively for gunpowder artillery, perhaps the first of its type in Britain. The plan of the building is polygonal, measuring approximately 54 feet by 60 feet $(16.5m \times 18.3m)$ (Illus 6).³⁴ It originally had a masonry rampart, the facing of which is almost entirely decayed, but which was up to 6.5m thick, graded in thickness according to the threat from battery. Towards the south, the straight faces converge and the salient seems to have been truncated as a short straight length of wall. The general shape of the blockhouse echoes that of a contemporary Italian angle bastion in the shape of its faces, though it is not entirely clear if this was by design, or as a result of the constraints of the site.35

The blockhouse was apparently unroofed. It consisted of four large ground-level casemates with segmental vaults which are deeply recessed into the rampart and open to the rear.36 Casemates were blast-resistant vaults from which the soldiers could fire through embrasures, thus maximising protection for the shooters. Seven gunholes survive: six in the casemates (two of the casemates have two gunholes each) and a seventh which penetrates the rampart. The gunhole throats are large enough to hold substantial pieces of artillery and it has been noted that the blockhouse provides the earliest datable examples of this particular gunhole to be found in Scotland (Illus 7).³⁷ Gunholes of this form certainly existed in France at this date.³⁸ Towards the northern side of the blockhouse are two (now collapsed) vaulted chambers, the larger of which had a fireplace and was evidently barrack accommodation. Above the casemates is evidence of a large parapet: perhaps originally about two metres thick. It has been suggested that the parapet may have had a curvilinear profile, perhaps similar to Italian examples.39 The parapet was accessed by a broad



ILLUS 7 Dunbar Castle blockhouse showing a gunhole used for substantial pieces of artillery (© B Coombs 2018)

ramp, or steps, on the northern side and narrow steps on the opposite side. The surviving physical evidence of the castle and blockhouse may, furthermore, be reconciled with contemporary literary accounts which provide us with a clearer idea of their form during this period.

DUNBAR CASTLE AND ARTILLERY BLOCKHOUSE: THE LITERARY EVIDENCE

After Flodden, defence was at the forefront of Scottish thoughts and thus in January 1514 the council considered how Fast and Dunbar Castles might be provided with men, artillery and victuals.40 Dunbar Castle formally passed to Albany on 6 December 1514 and Albany arrived in Scotland on 18 May 1515. Pitscottie notes that he brought six cannons, six great field pieces and other small guns with him from France to Scotland.⁴¹ Initially, however, Albany had to grapple with internal threats: Alexander Lord Home fortified Fast Castle against the new governor, causing Albany to occupy Fast and Hume Castles.⁴² In terms of artillery, by June 1523 it was said that 'most of the artillery of Scotland' was at Dunbar,43 while Pitscottie declared that in 1527 Dunbar Castle housed a formidable armament of two great cannons, two demi-cannons, two double falcons and four quarter falcons.44 Beyond artillery, Albany also apparently brought to Scotland examples of the types of military machinery we see illustrated in various military manuals of this period. A letter from Margaret Tudor to the earl of Surrey in 1523, for instance, notes that Albany brought to Scotland 'great pavasies, going upon wheels with the artillery, to shoot and to break the hosts asunder; and of these he hath many; and everyone of them hath two sharp swords before them, that none may touch them'.45

The most significant contemporary record regarding Dunbar Castle survives in the form of reconnaissance conducted by Lord Dacre, a field commander, for Cardinal Wolsey. In response to a request for information on the state of the castle, Dacre reported back to Wolsey on the 26 June 1523 that and ffinally touching the state and strength of the castell of Dunbar whereof your grace is desirous to be advised, I assure your grace it is a thing in manner unprenable for I have bene in it. It standith upon a crag and there is no waye to go to it but one which is strongly and substantially made with a new bulwerk and sett with ordinance as can be devised by the duke of Albany for in the said castell is all the said duke's trust. And if the said Bulwerk could be won I think there is no doubt but the castell might be won semblably be reason that the said castell stands low upon a crag and the erth without it is hygh about it, and so there could nothing stirr within it but the ordinance that were without the castell shulde bete it.⁴⁶

This communiqué provides crucial evidence that Albany was responsible for the new bulwark and that this was complete by 1523. It also highlights the contemporary reputation of the fortress as unwinnable. Dacre's 'bulwerk' was without doubt the same structure later described by Pitscottie as a 'great stane ... blokehouse'. He noted that 'into his awin castell of Dunbar, and thair remanit ane quhill; and gart craftismen and maissouns fall to work and build in the samin ane great staine house and insche callit the uttward blokehouse and garnist it witht artailzie pulder and bullatis'.⁴⁷

Albany left for France on 7 June 1517, leaving de la Bastie in charge. Dunbar Castle was occupied by five French gunners under Master Wolf by 1 October 1517.48 This perhaps reflects, as MacIvor has noted, the personnel required to man Albany's new fortification. Certainly, Albany's departure to France would have proved more acceptable if he had already rendered his base 'impregnable'. Dacre's account of Dunbar confirms that the blockhouse was built by 1523, and it is feasible that it may have been largely completed by 1517.49 De la Bastie was murdered on 18 September 1517, however, Dunbar remained in French hands under Saint Jacques as captain.50 Albany was delayed in his return to Scotland, but was eventually on Scottish soil again on 19 November 1521.51 It was noted that Dumbarton, Inchgarvie and Dunbar were 'stuffed with Frenchmen' at this time.52 Albany remained in Scotland until 25 October 1522.

Later reports of the castle are also informative. Jean de Beaugué, a French captain writing in the 1550s, for instance, noted that

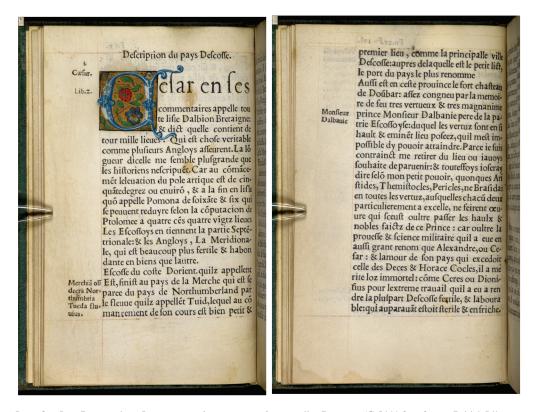
as for the castle, it is a very beautiful and strong place, built on a high rock, by the sea, with very difficult access, and which has been so well guarded, that there are few places today in the world which, by their nature are more advantageous, or less subject to battery and any other kind of conquest (De Beaugué 1556: 96).⁵³

Petruccio Ubaldini, an Italian mercenary working for Henry VIII noted in his *Description della region di Scotia* of 1588 that 'other than that at the mouth of Forth is Doumbar Castle, very popular among all the others of Scotland' (Ubaldini 1829: 34).⁵⁴

However, of particular interest for the purpose of this paper is an account provided

by Jean Desmontiers in 1538. Desmontiers wrote his text on the origin, topography and marvels of Scotland initially for presentation to Madeleine of Valois, however, the work was redirected, after Madeleine's death, to Catherine de Medici.55 Although the work takes much of its details from Boece, via Bellenden's translation, it also contains original topographical information that suggests that Desmontiers may have visited Scotland himself earlier in his career.56 Towards the centre of the text is a eulogy to Albany and his accomplishments in Scotland, which may indicate that Desmontiers was engaged in Albany's service earlier in his career, or perhaps that he accompanied him to Scotland. The section concerning Albany is worth quoting in full.

Also in this province is the strong castle of Dunbar: well known by the memory of the late very virtuous and very magnanimous prince M. Dalbanie father of



ILLUS 8 Jean Desmontiers, *Le sommaire des antiquitez & merueilles Descosse* (G.5441 f xv & xvv, British Library, London (© The British Library Board))

Scotland: of whom the virtues have already been put [written about] in so high & eminent place, that it is impossible for me to reach that level. Because I am compelled to withdraw from the place where I had wished to go: and yet I shall dare to say, according to my little power, that neither Aristides, Themistocles, Pericles, nor Brasidas in all the virtues, in which each of them particularly excelled, do no work that was beyond the high and noble deeds of this prince: for, besides the prowess and military science which he was as renowned for as Alexander, or Caesar: and the love of his country which exceeded that of Deces and Horace Cocles, he has deserved to be immortalised: like Ceres or Dionisius for the extreme work he had to render most of all of Scotland fertile, and workable/cultivatable: which was previously barren and fallow (British Library G.5441, f xv) (Illus 8).57

According, therefore, to Desmontiers the strength of Dunbar was well known in relation to the late duke of Albany, who outdid Aristides, Themistocles, Pericles and Brasidas in virtue of the noble deeds he accomplished. For besides his great prowess in military science, which he is remembered for as much as Alexander or Caesar, and the love of his country, in which he equalled Deces and Horace Cocles, he was immortalised like Ceres or Dionisius for his advancements in agriculture. This account of Albany's achievements and reputation is important and, hitherto, largely unexamined. It stresses what Albany was - or perhaps what he sought to be - remembered for on the Continent. The declaration of his prowess in matters of military science, mentioned in relation to his stronghold at Dunbar, is particularly interesting.

THE FIRST SUCH STRUCTURE IN THE BRITISH ISLES?

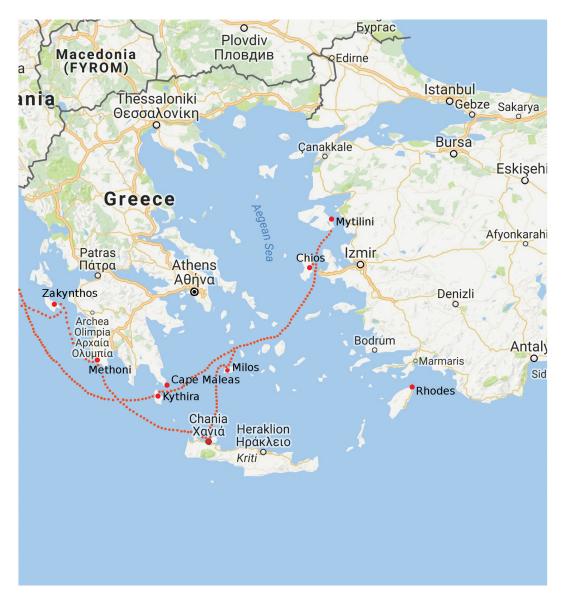
The development of gunpowder artillery during the 15th century created a need for resistant fortifications and this heralded a period of great innovation in the field of military architecture.⁵⁸ This transitional period, from medieval castles to early modern fortresses, is fascinating for the experimentation employed in order to achieve effective architectural solutions. Prior to this period, the defender of a fortress had the advantage. However, until fortifications were modified to defend against artillery fire, the attacker gained the advantage. The inadequacy of medieval fortifications, which emphasised height rather than strength, was illustrated by the victorious march of Charles VIII and his troops through Italy in 1494.59 That traditional defensive features were rendered obsolete by developments in artillery stimulated the development in Italy of a radically different form of fortification known as the trace italienne. Walls were reduced in height and widened into ramparts, the base of such structures sloped outwards, and bastions were introduced allowing the elimination of blind spots, where the enemy couldn't be reached by flanking fire. These transitional fortifications were individualised to accommodate the existing architecture and the site's topography.

Albany's blockhouse appears to have followed some of these developments. It was an architectural solution to the military problem of rendering the existing castle impregnable.60 The castle had topographical strengths, situated on a reef of rocks that projected out into the sea. The detached perpendicular rock to the southwest, which formed the site of the blockhouse, was an advantageous site for a fortification designed to update a medieval castle into an artillery-resistant fortress. Innovative features of the blockhouse included the relatively low-lying profile of the building protected, in part, by the natural escarpments of the rock, the thickness of the lower walls, and the polygonal plan of the bastion, designed to ensure that all approaches to the castle were covered.⁶¹ The upper walls of the blockhouse may have possessed a curvilinear profile in order to deflect shot; furthermore, the blockhouse employed large gun-ports for heavy artillery.⁶² The accumulation of these features suggests that this was an experimental architectural solution designed to fit the specific site at Dunbar, drawing on innovations Albany had encountered during his earlier military service on the Continent.63

The ideas that Albany experimented with in the creation of this blockhouse appear to have been the first example of this type of military architecture employed in Britain.⁶⁴ Many of the

developments discussed above were evident in the device forts of Henry VIII. However, the English king's campaign of coastal defence only began in 1539 and, therefore, post-dates Albany's blockhouse at Dunbar by over ten years.⁶⁵ We have already established that the blockhouse was built between 1515 and 1523 and it was perhaps largely completed as early as 1517. What, therefore, had Albany seen in his early career that may have influenced the design of his fortification at Dunbar?

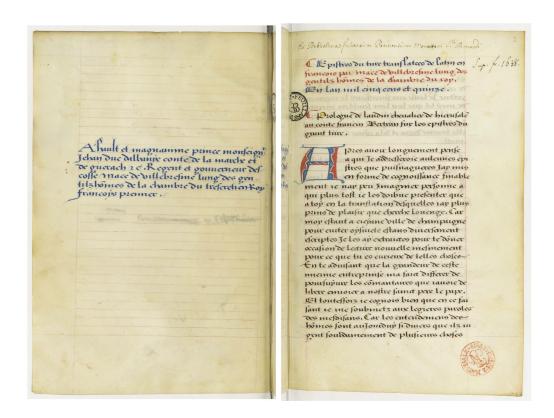
Albany participated in a crusade to the eastern Mediterranean in 1501. Here he would have seen the great fortress of Mytilene.⁶⁶ In this endeavour, the French were assisted by the Knights of Rhodes who would have acquainted



ILLUS 9 A map showing the approximate route taken by John Stuart, Duke of Albany on his crusade in 1501 (Map data © 2019 Google)

Albany with their development of some of the first polygonal bulwarks that would come to define the trace italienne.67 At Rhodes in 1496, under Grand Master Pierre d'Aubusson, a bastion of a slightly irregular pentagonal form, called the St George Bastion, was built. This became the most powerful stronghold of the fortress of Rhodes and one of the earliest pentagonal bastions in architectural history.68 One reason that Albany may have paid particular attention to the developments in military architecture at Rhodes was that Pierre d'Aubusson, like Albany, was an Auvergnat.⁶⁹ The innovative developments in military fortification taking place there may have caught Albany's attention, both in relation to his crusade and in respect to the Auvergne connection.⁷⁰ Jean d'Auton's account of the voyage provides enough information to sketch out a general itinerary and to map some of the sights and fortresses that Albany would have seen and which may have influenced his ideas regarding developments in military fortifications. These included Bohali Castle, Zakynthos;⁷¹ Methoni Castle,⁷² Cape Maleas; Chania in Crete;⁷³ the Castle of Chios;⁷⁴ while on his return voyage, his ship was wrecked on Kythira (Illus 9).⁷⁵

If, however, the inspiration for the blockhouse at Dunbar did not come from Rhodes, it may have come directly from Italy. Albany spent much of his early career in the train of Louis XII during his Italian incursions and may, therefore, have been influenced by the developments in military architecture undertaken, for instance, by Francesco di Giorgio Martini, Baccio Pontelli, Baldassare Peruzzi, or the brothers Giuliano



ILLUS 10 Epistres du Turc [MAHOMET II], Translated from Latin into French, by Macé de Villebresme, gentleman of the Chambre du Roy, 1515. Dedicated to the high and magnanimous prince Monseigneur Jehan duc d'albanye, comte de la march and guerach etc. Regent and governor of Scotland (BnF fr MS 12406 f 1v & 2r) (© BnF, Paris)

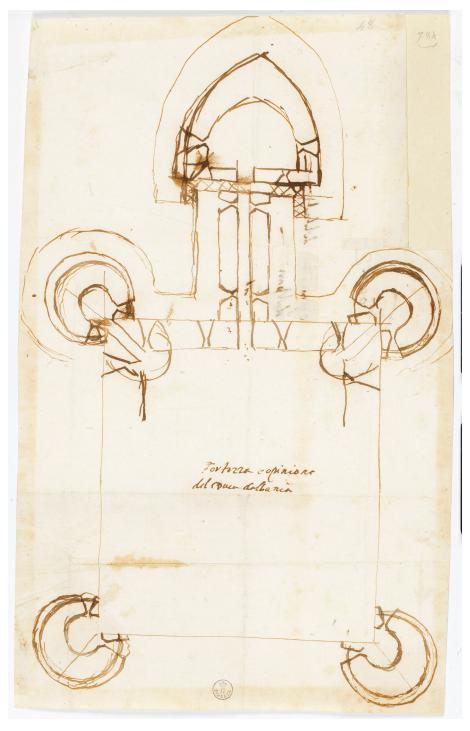


ILLUS 11 Fortifications at Rhodes, *Gestorum Rhodie obsidionis commentarii* (BNF Lat 6067 f 32r) (© BnF, Paris)

and Antonio da Sangallo.⁷⁶ The difficulty in pinpointing a single source for Albany's fortification results from several factors: principally that we do not know exactly how the blockhouse at Dunbar looked when it was intact, and also because the unusual topography of the site at Dunbar required a unique plan.⁷⁷ The blockhouse was intended to defend the castle covering all land approaches as well as the bay to the west. This was made possible by the unusual situation of the castle, and indeed of the blockhouse, on rocky promontories projecting into the sea connected by a great man-made curtain wall. An angle bastion in its simplest form was little more than a solid platform projecting out from a castle or town wall. Artillery enclosed in casemates could fire both outwards, in a confrontational manner, and sweep a curtain wall.⁷⁸ The angular shape of the blockhouse at Dunbar would have achieved this objective: it simultaneously allowed an outwards attack on a siege and a defensive sweep across the approach to the peninsula. It appears to have drawn on ideas being developed in Italy and Rhodes, and may be seen as a hitherto largely overlooked example of experimental military architecture for this period.

In examining possible sources for this type of military architecture, it is important to consider evidence of Albany's outlook and preoccupations during this early stage in his career. A fascinating, and so far unexplored, document provides important evidence with regards to piecing together his interests and preoccupations around the time he first travelled to Scotland.79 Macé de Villbresme was a courtier and a valet de chambre to Louis XII.80 He also acted as French ambassador to Scotland in 1515. He is recorded as having brought on the 3 May letters, dating to the 9 April, which told of the ratification by Francis I of the treaty made by his predecessor with England, with the inclusion of Scotland on the condition of hostilities ceasing on the English borders after 15 May.⁸¹ His exhortations were supported by Balthasar Stewart, an envoy of Leo X, who had been in Scotland for a year using all his efforts to persuade the Scots to abstain from war with England, and join in the crusade against the Turks.⁸² Of particular interest in relation to this episode is a document that survives in the Bibliothèque Nationale, Paris, containing the epistles of Mehmet II, translated from Latin (by Landin, knight of Jerusalem) into French, by Macé de Villebresme in 1515 and dedicated to 'Jehan, Duke of Albanye, regent and governor of Scotland' (Illus 10).83 Given that Villebresme died in August 1517, it is likely that this work was translated for presentation to Albany on Villebresme's visit to Scotland in 1515. Villebresme notes in the prologue to the work that he had pondered long and hard who to present the work to and had decided that there was no one better than Albany, given his 'curiosity' in such affairs. It appears, therefore, to provide evidence of Albany's interest in, and preoccupation with, the military matters he engaged with on his crusade some years earlier.84 The date of the presentation of this document precisely coincides with the beginning of Albany's campaign to fortify Dunbar and one wonders, therefore, if these events are connected.

That Albany was noted as 'curious' in matters concerning the siege of Rhodes may indicate that he obtained a copy of the important work by Guillaume Caoursin, Gestorum Rhodiae obsidionis commentarii.⁸⁵ This work, which describes in detail the siege, includes minutely accurate topographical illustrations of the fortifications and armament employed at this time (Illus 11). This text was an important piece of propaganda, intended to convince the sovereigns of the West to support the Knights of Rhodes' efforts against the Turks. Villebresme's mission to Scotland in 1515 had been on the pretext of promoting a truce between Scotland and England, but with a secondary objective of stressing the importance of crusading resolve. This was a political objective that Albany appears sympathetic towards. In terms of Albany's actions, his priorities on arrival in Scotland were principally concerned with strengthening Scotland's defences. Furthermore, he commissioned several manuscripts around this time which set out in forceful terms his military ambitions.⁸⁶ Albany's thoughts were evidently more inclined to war, and the promotion of his military capabilities, than to ideas of peace. The suggestion that Albany might draw upon military



ILLUS 12 Antonio da Sangallo the Younger, A drawing of a transitional fortification, with the note: '*Fortezza e opinione del Duca dalbania*' (U1051A) (© The Uffizi Gallery, Florence)

innovations he had encountered on his travels, when thinking about Scotland's defensive capabilities, appears consistent, therefore, with his outlook and priorities.

UFFIZI DRAWING U1051A: ALBANY AND ANTONIO DA SANGALLO THE YOUNGER

That Albany was concerned with fortifications and developments in military science, particularly in relation to his time spent in Italy, is demonstrated by a fascinating surviving document. In the Uffizi Gallery in Florence are a large collection of architectural drawings attributable to the Sangallos, an influential family of Florentine architects and military engineers.⁸⁷ Among these is a rough sketch in brown ink on paper that appears to show proposals for the modernisation for a typical late 15th-century fortress, by the addition of a ravelin and caponier (U1051A) (Illus 12). A line of text on the sketch notes '*Fortezza e* *opinione del Duca dalbania*', or 'fortress and opinion of the Duke of Albany'. A note on the verso again states '*Forteze; openione delducha dalbania*'.⁸⁸ The writing, certainly on the verso, has been attributed to Antonio da Sangallo the Younger (12 April 1484–3 August 1546). That Albany's opinion regarding a matter of military science should have been sought by such an eminent Renaissance architect and engineer is fascinating and deserves greater consideration than has hitherto been the case.

Adams and Pepper note in their catalogue of the architectural drawings of Antonio da Sangallo the Younger that drawing U1051A recalls the work of Francesco di Giorgio Martini; similarities may be seen, for instance, in his proposals for Fossombrone.⁸⁹ The basic forms, furthermore, are explored in his *Trattato d'architettura civile e militare*.⁹⁰ The manner in which a ravelin and caponier has been employed in a transitional form most closely resembles, however, the Spanish-built fortress of Salses in Roussillon.⁹¹ Construction at Salses was



ILLUS 13 The transitional fort de Salses, Salses-le-Chateau, view from the east (RMW17-0109, 2017) (© Rémy Marion / Pôles d'images / Centre des monuments nationaux)

conducted from 1497-1504 for Ferdinand II of Aragon (Illus 13). The fortress marked an important point of passage for any invading army wishing to move from Languedoc to Roussillon. It was designed by the engineer Francisco Ramiro López and, while still in progress, the fortress suffered and resisted a siege by the French under Louis XII in 1503. Revolutionary for its time, Salses presents a rare surviving example of this transition between the medieval castle and bastioned fortification that began to appear in the first quarter of the 16th century. Given that the French army laid siege to Salses in 1503, at a time when Albany was commanding French troops for Louis XII against the Spanish, it is possible that he had first-hand knowledge of this particular fortification.92 It is, therefore, plausible that the sketch came about following discussions between the architect, Sangallo, and the soldier and diplomat, Albany, in relation to Albany's direct military experience of laying siege to this fortress some years earlier.93

Two scholars have mentioned the Uffizi drawing in relation to Albany and his fortification at Dunbar. In 1999, Marcus Merriman noted, in relation to the blockhouse at Dunbar, that 'the broad-brush stroke conception may have been the brain storm of none other than Antonio da Sangallo the Younger', and in 2001 Iain MacIvor, attributing the sketch to Migliorino Ubaldini, noted that it 'shows a place which looks like Dunbar Castle as it might be envisaged from a verbal description of the place'.94 I believe both scholars were mistaken. The drawing appears not to be directly linked to Dunbar Castle. It does not provide evidence of Antonio da Sangallo the Younger participating in the plans for Dunbar, nor does it show a sketch referring to a verbal description of Dunbar. The drawing appears to show a description provided by Albany of the fortress at Salses, or a similar example of transitional military architecture from this period. What is important is that Albany's opinion was evidently highly regarded by Antonio da Sangallo the Younger, and in this respect Albany's reputation, recorded by Desmontiers as demonstrating prowess in military science, is crucial. It is the wider reputation of Albany's fortress at Dunbar that is key. If Antonio da Sangallo the Younger was aware of the strategically important, impregnable fortress that Albany had had built in Scotland, this would clarify why he might seek out the Duke's opinion on other matters of military architecture.

DATING THE DRAWING: ALBANY AND HIS LATER DIPLOMATIC CAREER

In dating the drawing we must return to Albany's career and the time he spent in Italy; particularly important in this respect are his family connections to the Medicis. On 2 May 1518, Madeleine de la Tour, Albany's sister-inlaw, was married to Lorenzo de' Medici, Duke of Urbino.95 The marriage was extremely important for Albany, substantially elevating his standing in France by allying him with the powerful Florentine Medici family and by providing him with a direct connection to Lorenzo's uncle, Pope Leo X. Within several months of the birth of Madeleine and Lorenzo's only child, Catherine - at Urbino on 19 April 1519 - both parents died. This left the young child's closest relatives as Pope Leo X and Albany. Francis I decreed that the child should inherit her parents' share of the de la Tour lands and properties, making Catherine de Medici a great heiress in France. Albany visited Rome in June 1520, pledging obedience to Pope Leo X, as ambassador of King James V of Scotland.96 His position as a duke and regent to the kingdom of Scotland appears to have complicated the normal diplomatic protocol; he was allowed in this instance to sit with the cardinal-deacons at Mass rather than with the other diplomats. The master of ceremonies noted that this concession was made 'by the grace of the Pope because they are related'.⁹⁷ Furthermore, in both papal bulls secured by Albany at this time he is referred to by the Pope as his dilecti filli, 'beloved son'. Following the death of Pope Leo X on 1 December 1521, Albany was appointed Catherine's tutor and guardian, as her closest male relative.

Having returned to France from Scotland in 1524, Albany joined Francis I's Italian campaign against Charles V. He was in the vanguard of

Francis I's army that left France for Milan in autumn 1524. Around 25 November he was ordered by the French king to proceed with 4,000 foot soldiers and 500 lances and commence an attack on Naples. He was accompanied by Giovanni de Medici as commander of the light cavalry. Albany prepared for this expedition by corresponding with the governors of Parma, Piacenza and Bologna, requesting safe conduct and permission to purchase supplies.98 Albany was, however, recalled by the French king, before being dispatched a second time to Naples, this time with 300 light horsemen, 600 men at arms, 7,000 foot soldiers and a dozen pieces of artillery. He thus proceeded through Lucca, but appears to have made slow progress thereafter, perhaps fearing that he would once again be recalled. By the end of January 1525, Albany had only reached Siena.99 Albany entered Rome on 13 February, and was lodged with honour as the Pope's kinsman.100 Here Albany, no doubt, took the opportunity to visit his niece, Catherine. Given that his wife, Anne de la Tour, had died a year earlier and that they had no children, Catherine was Albany's closest surviving relative.¹⁰¹ Having then travelled to Formello, on 24 February, Albany was informed of the devastating news that Francis I had been captured at Pavia. He thus retreated to papal territory and left Italy for France at the end of March.¹⁰²

Albany's interest in Scotland persisted and in March 1527 Albany, as ambassador for France, was heavily involved in the negotiations to declare the marriage of Margaret Tudor and the Earl of Angus invalid.¹⁰³ Rumours also continued to circulate that Albany would return to Scotland.¹⁰⁴ In 1530 Albany was appointed French ambassador to the Holy See, acting as the chief negotiator for the marriage of his niece, Catherine, and the duc d'Orleans.¹⁰⁵ Albany's status at this time again appears to have caused some difficulties in terms of papal ceremony, given that dukes outranked ambassadors. On this occasion he was treated as a duke.¹⁰⁶ Albany's family ties to the Pope evidently afforded him special standing in Rome. This was illustrated in November 1530 when he was responsible for carrying the papal train, and at Christmas 1531, when the ambassadors were ranked, in reverse precedence, Venice, England, Imperial, duke of Albany.¹⁰⁷ In mid-August 1533, Albany returned to Italy to escort Catherine to France for her wedding.¹⁰⁸

There are, therefore, several periods during Albany's career when he may have made the acquaintance of Antonio da Sangallo the Younger: during his brief visit to Rome in 1520, his protracted military excursion in 1525, or as part of the long running negotiations of 1530– 3. Although Albany had been in Italy prior to becoming regent of Scotland, at this time he did not have the kinship links to the Medici popes, Leo X and then Clement VII, which would later afford him a more elevated social standing and access to the more privileged circles in Rome.¹⁰⁹ It is through access to these circles most likely, in either 1525 or 1530–3, that Albany could have made the acquaintance of Sangallo.

Sangallo maintained a good relationship with the popes throughout his career. Under Pope Leo X he undertook the design of fortifications for Civitavecchia (1515-20), the naval base on the west coast of the Papal States. Under Clement VII he worked on numerous civic and ecclesiastical projects, and in 1526 the Pope commissioned him to assess the state of fortifications of Papal possessions. For this he travelled around Italy inspecting fortifications, assisted by Sanmicheli.¹¹⁰ The bulk of Antonio's surviving drawings date to the later period of his career and throughout the 1530s, when he and his workshop were busy simultaneously working on a number of fortification projects. The production of a hasty sketch illustrating Albany's opinions on the most effective manner to fortify a medieval castle against artillery fits well into this working climate.¹¹¹ Albany's status, his standing and reputation in Italy are, therefore, crucial to our understanding of the manner in which he was perceived there. The circles in which he moved, and the contacts that he made, are important indicators of how he operated as a conduit for ideas between Scotland, France and Italy. We are fortunate that several other pieces of evidence help us sketch a clearer picture of Albany's cultural interests and enthusiasms, and the artistic contacts he forged, during this period.



ILLUS 14 Andrea del Sarto, *The Sacrifice of Abraham* (P0003360 (© Photographic Archive Museo Nacional del Prado))

ALBANY, DEL SARTO AND RUSTICI: CULTURAL CONTACTS IN RENAISSANCE ITALY

In a letter written in Florence on 8 October 1531, by Giovan Battista Mini to Baccio Valori in Rome, Mini announces the sale of a 'quadro de l'Abram' by Andreino del Sarto for 125 ducats to John Stuart, Duke of Albany.¹¹² Two copies of a painting of the same subject, attributed to the Florentine painter Andrea del Sarto, were also mentioned in the contemporary account of Andrea del Sarto's life by Georgio Vasari. Vasari records how Giovanni Battista della Palla, on the authority from the King of France, commissioned of del Sarto 'Abraham about to sacrifice Isaac'. Andrea apparently produced a masterpiece in response to this request, which Vasari describes in some detail. He then notes that Paolo da Terrarossa, having seen a sketch of the Abraham, asked for a copy of it, which Andrea did for him in a reduced scale.¹¹³ There are three surviving versions of this subject attributed to Andrea del Sarto: Gemäldegalerie Alte Meister, Dresden, Gal.-Nr. 77; The Cleveland Museum of Art, no. 37.577 and the Prado Museum, P000336.114

Disentangling which of the surviving paintings might relate to which contemporary record has proved problematic; nevertheless, it is generally supposed that the two paintings mentioned by Vasari are those in Dresden and Madrid. It is also agreed that the Cleveland version represents an unfinished original autograph version of the composition, perhaps an abandoned early attempt. The Dresden painting is believed to be the version commissioned by della Palla for the French king, and the Madrid version that for Paolo Terrarossa.¹¹⁵ It is also the Madrid version which is thought to be that bought by Albany (Illus 14).¹¹⁶ Shearman notes that as an ambassador for Francis I in Italy, Albany likely acquired the painting on behalf of the French king, however, this was not necessarily the case.117

Dating to August 1529, a French document records that three carriers were charged to transport from Paris to Vic-le-Comte '12 images of terracotta of the 12 apostles of our Lord' for Albany.¹¹⁸ The sculptures noted in the document

are evidently the 12 terracotta figures still displayed in the gallery of the Sainte-Chapelle at Vic-le-Comte, which Albany founded in 1520.119 The document does not name the sculptor, however, an attribution to the Florentine artist, Giovanni Francesco Rustici (1475–1554), who was then working in Paris, is convincing on stylistic and circumstantial grounds.120 The documentation of this transportation of sculptures is interesting: it demonstrates the great lengths that Albany went to to complete the decorative programme of his chapel and, furthermore, illustrates his desire to incorporate a contemporary Florentine aesthetic into his French religious foundation, regardless of the expense.¹²¹ If Albany was preoccupied with commissioning Italian artists to provide decorative features to be included in his Sainte-Chapelle in 1529, it is plausible that the Andrea del Sarto painting may also have been acquired for a similar purpose.¹²² Certainly Italian works of art were greatly sought after in France during this period, and a Saint Sebastian painted by Andrea Mantegna, for instance, appears to have been displayed in the neighbouring Sainte-Chapelle at Aigueperse, also in the Auvergne, at this time.123

The unifying factor between Albany's contact with Antonio da Sangallo the Younger, Andrea del Sarto, and potentially with Francesco Rustici, is Medici approval. All worked for the Medici family during their career and the merits of their work were quite possibly introduced to Albany via his Medici connections. During the 1520s and early 1530s, evidence suggests that Albany moved in exalted circles in Italy, primarily due to his kinship with the Medici family. It appears, furthermore, that he was interested in matters of art and architecture: commissioning decorative features for his grand ecclesiastical foundation back in France, but also evidently engaging in theoretical discussions regarding military architecture with some of the most important practitioners of the day. That Sangallo might have been receptive to Albany's thoughts on such matters attests both to the high regard with which he was held by Sangallo's principal patron, Clement VII, but also may owe something to the military reputation that Albany cultivated and

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ILLUS 15 Bremond Domat, 'Le duc Jehan dalbanie les armes de ma dame anne de boloigne sa femme', Généalogie de Madame Anne de la Tour, princesse de l'Écosse (KB 74 G 11, f 52v-53r. 1518) (© Koninklijke Bibliotheek, Den Haag))

was documented by Desmontiers. That Albany's reputation was linked to his supposed prowess in military science in general, and the wider reputation of his fortress at Dunbar in particular, is of great importance.

CONCLUSION: REPUTATION AND PRESTIGE, ALBANY AND HIS SCOTTISH FORTRESS

As I have explored elsewhere, Albany was very adept at constructing and promoting his selfimage.¹²⁴ We can see evidence of this in two manuscripts he commissioned in 1518 and 1519: a French translation of the *Liber Pluscardensis*, with an illuminated genealogy of the kings of Scotland appended (the Paris Manuscript), and a composite manuscript including genealogical material relevant to his wife's family, the counts of Boulogne and d'Auvergne (the Hague Manuscript).¹²⁵ In the Hague Manuscript, a poem included underneath an ornate representation of Albany's arms, impaled by those of Anne de la Tour, sets out his military objectives (Illus 15). It boldly proclaims:

Albany, bonnie child, who will by sea conquer, Scotland also England, and put them into subjection, by strength of arms and of war, he will take possession of them.¹²⁶

An affirmation of these military ambitions is reiterated in the section that follows, which addresses the influence of the planetary deities on Albany's life. Here he is described as 'double crowned two times king'. His intent was, therefore, to suggest that he was not only the ruler of Scotland, but the potential ruler of England.

The prognostication of the nativity of prince Jehan, duc dalbanye, as speculated by the planets.

VENUS, principal planet,127 governing his nativity promises him papal power coming from the divinity absolute authority double crown two times king Mars threatens him with adversity and with a little disarray SOL, very magnificent planet who governs the heart of princes as good, dignified and angelic He gives kingdoms and provinces Jupiter minces his enemies held and gives him power the hour and the gift of twelve nymphs from which will come a ...128 SATURN is gracious to him and generate some noise But mercury the gracious will defer all pleases or non-pleases Luna will do everything at his ease promising him good fortune but so that Minerva is not displeased there will be no contradiction.

Therefore, when Albany commissioned his French translation of the Liber Pluscardensis, in the Paris Manuscript, he had an imperative to promote a biblical origin myth for the Scottish nation. Given his statement of intent in the Hague Manuscript, foreseeing himself as 'double crowned two times king', he had every impetus to stress Scotland's antiquity and rights over England.¹²⁹ In the preface and prologue to the Liber Pluscardensis, the author and translator, Domat, noted that he sought to praise the victorious and invincible men of Scotland, a nation resplendent in all parts of the world and feared by all, a nation who was not defeated by the obstacles of persecution, pests, tyranny and insults. The royal house of Scotland, he wrote, had its origin 330 years before the incarnation of our Lord and had not succumbed to subjection. This longevity and autonomy was crucial to any ideas Albany harboured regarding a claim to sovereignty in England.¹³⁰ He notes, furthermore, that occupants of the noble kingdom of Scotland were resplendent in all parts of the world, and feared and redoubted by all nations. Albany was keen not only to promote Scotland and the virtues of the Scots on the Continent, he also wished to promote his strategic military importance and his European significance as a potential ruler of both Scotland and England. In this respect, possessing a formidable fortress in Scotland, renowned as being impregnable, was very important. Whether the reality of Dunbar Castle and its blockhouse entirely measured up to such a reputation was not important. If Albany boasted of his fortress while in France and Italy, he could be sure few would actually travel to Scotland to see it: its reputation was what counted. That Albany went to great lengths to retain possession of Dunbar after his regency was renounced emphasises its strategic importance for Albany in both a military and a diplomatic sense.131

The purpose of this paper has been to examine two pieces of evidence relating to Albany's documented reputation as being renowned for his prowess in military science: the building of his artillery blockhouse at Dunbar and the sketch of a fortification attributed to Antonio da Sangallo the younger following the opinion of the Duke of Albany. A careful examination of these two pieces of evidence in relation to Albany's military and diplomatic career reveals that the traditional interpretation of them as directly linked, ie as the sketch deriving from, or forming the basic plan for, the blockhouse at Dunbar is mistaken. They are, nevertheless, linked in an equally interesting manner; Albany's reputation on the Continent, as a man possessing prowess in matters of military science, likely stemmed, in part, from the reputation of his impregnable fortress at Dunbar. His opinions, therefore, on matters of military architecture, particularly drawing on his early experiences as a mercenary for Louis XII, may have been considered valuable in Italy.¹³² Crucial to this reputation was his kinship and the support he received from the Medici family, who apparently facilitated his integration into cultural and artistic circles in Rome at this time.

The artillery blockhouse at Dunbar was certainly a new innovation in military architecture in Scotland, and likely within Britain.133 It was admired and respected by field commanders and others from England, France and elsewhere. Tracing Albany's early career suggests that it may have drawn upon experimental architectural practices being developed in Italy, but also perhaps from farther afield; drawing on defensive strategies Albany had encountered in the eastern Mediterranean while engaged in a crusade to Mitilene. That Albany was interested in developments relating to combat and fortification in the east is hinted at by the epistles of Mehmet II, dedicated to Albany by Macé de Villebresme in 1515, the same year that Albany first arrived in Scotland and began to consider strengthening the fortifications at Dunbar. Albany's blockhouse appears to have been an experimental solution designed to combat a particular threat. It is an interesting early 16th-century example of the importance of individual figures, such as Albany, acting as conduits for the transmission of ideas between Scotland, Europe and farther afield. Lastly, it falls to the author to reiterate Iain MacIvor's earlier attempt to highlight the importance of excavating this unique site before it is entirely lost to coastal erosion and structural decay.134 Such work may allow for a greater understanding of the true profile of this important building and further work of this nature would facilitate in-depth research into the likely sources of inspiration behind the plan. It is, therefore, with some urgency that I wish to highlight the historic importance of recording and excavating the remains of the castle and blockhouse at Dunbar.

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NOTES

- 1 Brewer 1920, IV: no. 52.
- 2 Molinet 1828, XLVII: 183–91; D'Auton 1834, II: 12, 17, 19, 49–50, 57–8. The commander of this mission was Philippe de Ravenstein who appears to have hand picked Albany to accompany him.
- 3 'Le duc d'albanie pareillement se trouva main à main avec un autre Turc, lequel vigoureusement vainquit et occit.' D'Auton 1834, II: 85. He is again singled out for special mention in D'Auton 1834, II: 49–50.
- 4 Stuart 1940: 15.
- 5 D'Auton 1834, III: 23.
- 6 On 5 December 1512, Louis XII dispatched a request to James IV that Alexander Stuart's confiscated estates might be restored upon Albany, thus enabling the French king to make a marriage settlement befitting such a match (Wood 1933: 62–5).
- 7 D'Auton 1834, III: 309-37.
- 8 It has been supposed that Albany was little concerned with the affairs of Scotland up until this point. However, evidence suggests that *c* 1509 he may have commissioned a copy of Pierre Gringore's *Abus du Monde* (Pierpont Morgan, MS M 42) to present as a gift to James IV. The gift was evidently intended to secure Scottish support for the French king's Italian ambitions in general and the activities of the League of Cambrai in particular (Coombs forthcoming).

- 9 Fleming & Miller 1908: 281.
- 10 Wood 1933: 84.
- 11 Hannay 1932: 20.
- 12 Hannay 1932: 21.
- 13 At the coronation of Francis I, Albany took an exalted position in the procession. He appeared at the coronation in glorious apparel, wearing silver-brocaded white satin sewn all over with birds' wings wrought in silver-gilt that fluttered as he moved. The edging was embroidered with his motto *Sub umbra alarum tuarum* (Godefroy 1649, I: 271–5; Baluze 1708, I: 354). The motto translates as 'In the shadow of thy wings' (Psalms 16:8 of the Vulgate Bible).
- 14 Hannay 1932: 40.
- 15 Hannay 1932: 27.
- 16 Pinkerton 1797, II: 132–3. Pinkerton notes that the duke was inaugurated as governor of Scotland with solemn ceremonies during which a crown was placed upon his head, the lords paid homage, and the regency was proclaimed to last until the youthful king was 18, that is until 1530.
- 17 MacIvor 2001: 70.
- 18 It remained a possibility that England might again attempt to occupy Dunbar Castle as an advance post from Berwick.
- 19 Grose 1797, I: 85.
- 20 The castle remained the stronghold of the earls of Dunbar until the forfeiture of George, Earl of March, in 1457, when it was dismantled to prevent its occupation by the English. It was restored by James IV later in the century (Dickson 1877–1905, I: lxxxiii, 323; II: lxxxii. For Ubaldini see Merriman 1999: 240–2).
- 21 Dunbar and the fortress on Inchkeith were to be 'cast down utterly to the ground and destroyed in such a way that no foundation thereof be the occasion to build thereupon in time coming'. (*The Records of the Parliaments of Scotland* to 1707, A1567/12/34). In September 1568, some of the stone was selected for reuse at the quayside of the shore of Leith (Marwick 1875: 250–9).
- 22 Measured at 69 feet (21m) by Miller, the wall collapsed in 1993 (Miller 1830: 4). In military science, a blockhouse was a sturdy fortification designed for gunpowder artillery, it usually refers to an isolated fort in the form of a single building, serving as a defensive strong point. Blockhouses sometimes had accommodation for the short-term use of a garrison.

- 23 The harbour entrance was constructed in 1842.
- 24 Miller 1830: 2.
- 25 MacIvor 1981: 94.
- 26 Grose 1797, I: 85-90; Miller 1830: 4-5.
- 27 Pidgeon 1869: 344-5.
- 28 For instance, see the current listing on Canmore: https://canmore.org.uk/site/57687. Pidgeon 1869: 344. Miller in 1830 suggests that the armorial plaques relate to George, eleventh earl of Dunbar (Miller 1830: 4). Grose mentions the arms but does not suggest who was responsible. Sir Walter Scott suggests that the armorial plaques relate to Albany's father, Alexander Stuart. However Scott suggests the full arms may be found among others, which is likely an error (Scott 1834: 410).
- 29 See note 20.
- 30 A chapel dedicated to St John was also built at this time (Dickson 1877–1905, I: lxxxiii, 323; II: lxxxii).
- 31 Albany's arms may be described as: Quarterly; first, or, a lion rampant gules, armed and langued azure, within a double tressure flory counterflory gules (Scotland); second, gules, a lion rampant argent, on a bordure argent, charged with eight roses gules (earldom of March); third, gules, three legs embowed and conjoined at the thigh, argent spurred or (lordship of Man); fourth, or, a saltire and chief gules (lordship of Annandale). The arms visually convey the close relationship of Albany to the royal house of Scotland and display his hereditary titles: earl of March, lord of the Isle of Man and lord of Annandale. Sixteenth-century examples of Albany's arms may be found in the Scots Roll at the British Library, Add MS 45133 f 47r and the Armorial of Sir David Lindsay, at the National Library of Scotland, MS 31.4.3, f 25.
- 32 The royal arms of Scotland found on Albany's shield may have featured on this section of the sculpted decoration.
- 33 For instance, see the slightly later armorial plaque at Spynie Palace with Bishops David Stewart's and Patrick Hepburn's armorial shields.
- 34 Miller 1830: 4.
- 35 MacIvor 1981: 112; MacIvor 2001: 69.
- 36 The soffits of two of the casemates are pierced with vents to help disperse smoke (MacIvor 1981: 113).
- 37 The lower-level gunholes may have accommodated large pieces of artillery; a

stocked breech-loader on a trestle mounting has been suggested (MacIvor 1981: 94–152). The guns on the upper tier may have been longer-ranged, muzzle-loaded pieces mounted on carriages. Fawcett notes that such gunholes were to be widely copied in Scotland (Fawcett 1994: 290).

- 38 These gunholes appeared in France around 1460 (Tabraham 2005: 86).
- 39 The suggestion of a curvilinear profile is supported by early engravings of the castle. MacIvor suggests a comparison with Sangallo's bastioned *fortezza* at Pisa (MacIvor 1981: 116).
- 40 Hannay 1932: 7.
- 41 Pitscottie 1899, I: 288. Pitscottie is not, however, an altogether reliable source and his account must be treated with caution.
- 42 Home fled to England, gave himself up, was placed in Edinburgh Castle, and then fled again (Stuart 1940: 51–6).
- 43 Brewer 1920, III: no. 3114. Albany is recorded as bringing 55 ships loaded with Frenchmen, artillery and victuals in support of his realm from France on his third visit (Thomson 1833: 8; Dickson 1877–1905, V: 42).
- 44 Pitscottie 1899, I: 331.
- 45 Cotton MS Caligula, B, VI, f 379, published in Green 1846: 284. There is evidence that Albany owned a collection of popular military manuals. BnF MS lat 18610 contains an inventory of the extensive library of Catherine de Medici at Château Mirefleur in 1560. This was a library directly inherited from Albany after he died at Château Mirefleur, his favourite residence, in 1536. On f 208r of the inventory we find, for instance, 'plus ung livre nomme Robertus Valturius' evidently the popular military manual, *De Re Militari*.
- 46 Add MS 24965, f 27; Brewer 1920, III: 3134.
- 47 Pitscottie 1899, I: 303.
- 48 Dickson 1877–1905, V: 155.
- 49 Dacre was recalling an earlier visit to the castle. Perhaps he attended a meeting there on 28 January 1522. This is hinted at in Brewer 1920, III: no. 1949. This would increase the likelihood of construction of the blockhouse to the first period of Albany's governorship.
- 50 Burnett & Stuart 1878–1908, XIV: cxliii, 351.
- 51 Francis I wished to remain friendly with England and thus Albany was unable to return. His return would have been viewed as a hostile

act to Henry VIII. Nevertheless, Anglo-French relations deteriorated and Albany was able to return to Scotland.

- 52 Brewer 1920, III: 811.
- 53 'Et quant au chasteau, c'est une fort belle & forte place, bastie sur un hault rocher, au bord de la mer, de tresdifficile avenue, & ou l'art ha eté gardé tellement, que peu de lieux se touvent aujourd'huy au monde, qui soyent de leur nature plus avantageux, ne moins sujets à baterie & à tout autre sorte d'expugnation' (De Beaugué 1556: 96).
- 54 'Oltra di ciò alla foce di Forthea è il castello Doumbar munitissimo tra tutti gli altri di Scotia' (Ubaldini 1829: 34).
- 55 Madeleine died on 7 July 1537.
- 56 Hector Boece, a native of Dundee, studied in Paris before becoming principal of King's College, Aberdeen, in 1500. He wrote his Historia Gentis Scotorum in Latin and published it in Paris in 1527. John Bellenden translated Boece's history into the Scottish vernacular text, Croniklis of Scotland. It was published in Edinburgh in 1536. The description Desmontiers gives of the Tweed at Berwick does not appear in Boece or Bellenden, and suggests that he had visited this area. The following phrase suggests an eyewitness account: 'J'ay oiiy dire vulgairement que en Angleterre n y avoit poinct de Loups, mais je puis bien asseurer d'en avoir veu pardeca Bervic' (British Library, G.5441, f xvi). Desmontiers' text exploited an interest in all things Scottish (in France) at the time of James V's marriage. The appearance in Paris of the histories of Mair and Boece attests to public interest in such matters, particularly in the marvellous and mysterious in Scotland. Desmontiers Sommaire is a valuable document which indicates what a 16th-century Frenchman was willing to believe about Scotland (Desmontiers 1863: Miller 1903: 27-38; Johnstone & Robertson 1929: 37-8; Young 1952: 1-11).
- 57 British Library G.5441, f xv. 'Aussi est en cest province le fort chasteau de Doúbar: assez congneu par la memoire de feu tres verteux & tres magnanime prince monsieur Dalbanie pere de la patrie Escossoyse: duquel les vertuz sont en si hault & eminét lieu poseez, quil mest impossible dy pouvoir attaindre. Parce ie suis contrainct me retirer du lieu ou iauoys souhaite de parvenir: & toutesfoys ioseray dire

seló mon petit pouvoir, quonques Aristides, Themistocles, Pericles, ne Brasidas en tout les vertuz, ausqueslles chacú deux particulierement a excelle, ne feirent oevure qui sceust oultre passer les haulx & noblez faicts de ce Prince: car oultre la prouesse & science militaire quil a eue en aussi grant remon que Alaxandre, ou Cesar: & lamour de son pays qui excedoit celle des Deces & Horace Cocles, il a merite loz immortel: come Ceres ou Dionisius pour l'extreme travail quil a eu a rendre la pluspart Descosse fertile, & labourable: qui auparauát estoit sterile & enfriche.' Numerous copies of the Sommaire are known. See Pettegree, Walsby & Wilkinson 2007: 466, who list at least 18. The version I consulted is British Library, G 5441. The British Library copy omits the dedication to Catherine de Medici and has consequently a different pagination; this beautiful volume, printed on vellum and bound in green silk, contains several illuminated initials and previously belonged to the Right Honourable Thomas Grenville.

- 58 Gunpowder had been used in Europe since the early 14th century. The critical change came in the later 15th century when the French adopted iron shot, giving an enhanced destructive performance from lighter more mobile guns.
- 59 Hale 1983a: 6. His siege train included powerful artillery which enabled him to take city after city with a force of only 40,000 men (Knecht 1994: 70). Pepper has, however, challenged the traditional account of the effectiveness of French artillery on Italian fortifications (Pepper 1995: 263–93). For the growing importance of garrisons for the French monarchy at this time see Contamine 1972; Potter 2008; Mallet & Shaw 2012.
- 60 Scottish blockhouses tended to be rounded. One of the earliest may have been the D-shaped example built to protect the harbour at Aberdeen, perhaps planned in 1497, however, built in 1533–42. Blockhouses appeared at St Andrews c 1523. Archibald Douglas, sixth earl of Angus, would have witnessed the building of the blockhouse at Dunbar and it appears that he attempted to imitate it at Tantallon Castle shortly afterwards. A circular two-storey guntower survives at the entrance today (Fawcett 1994: 295; Meikle 2014: 433). The problem with these rounded examples was that they left dead ground which could not be covered by flanking fire.

- 61 The blockhouse also defended a landing spot to the west. Lord Dacre confirms the lowlying aspect of the blockhouse noting that 'the said castle stands low upon a crag and the erth without it is high about it and so there could nothing stint within it but the ordinance that were without the castell bete it' (see note 46).
- 62 MacIvor 1981: 116.
- 63 James V, while in Orléans, granted letters under the privy seal on 1 December 1536 to Mogin Martyne, Frenchman, sometime master mason of the castle of Dunbar, making him his master mason. It is often assumed Mogin (Moyse) was responsible for building the blockhouse. We do not know for certain when he was employed at Dunbar, or what he was responsible for. MacIvor makes the suggestion that Martyne may also have had some hand in the reinforcement of Blackness Castle. The blockhouse at Dunbar was likely built under the supervision of de la Bastie, a French military leader with engineering expertise (Paton 1957, I: xxxi, xxxiv, 1, 206, 208; MacIvor 1981: 128; Fawcett 1994: 289, 320, 323).
- 64 'In this work the Scots were introduced for the first time to more up-to-date notions of what was appropriate for such artillery fortifications' (Fawcett 1994: 289). 'Albany was to add a further reinforcement of the place which set Dunbar at the forefront of fortification development in Britain' (MacIvor 2001: 69). 'It was a fortification designed exclusively for gunpowder artillery, and can rightly claim to be the first of its type in Scotland, and among the first in the British Isles' (Tabraham 2005: 86).
- 65 Henry did resolve in 1519 to check the security of his frontiers, but there appears to have been little resulting from this (Brewer 1920, III: 576). The Device Forts, also known as Henrician castles, were a series of artillery fortifications built to defend the coast of England and Wales by Henry VIII. The threat of French and Spanish invasion led the King to issue an order, called a 'device', for a major programme of work between 1539 and 1547. The initial instructions for the 'defence of the realm in time of invasion' concerned building forts along the southern coastline of England, as well as making improvements to the defences of the towns of Calais and Guisnes in France, then controlled by Henry's forces. Thirty new fortifications were constructed in 1539 (Hale 1983b).

- 66 In 1501, Sultan Bayezid II repaired the damage suffered by this castle during the Ottoman– Venetian War (1499–1503) and built two large round towers with cannon and developed new walls.
- 67 D'Auton 1834, II: 18, 22. Rhodian fortification was advanced for its time. Some elements, for instance protobastions in the form of pentagonal bulwarks, apparently came into being in Rhodes before they appeared in Italy. Also, the classical pattern of the bastion was developed here simultaneously with the Italian examples. It is unclear if Albany actually visited Rhodes in person on his crusade, however, he would certainly have been informed of developments by the Knights of Rhodes who assisted the French on this crusade.
- 68 Nossov 2012: 26.
- 69 Grand Master Pierre d'Aubusson (1476-1503), was a hero of the siege of Rhodes in 1480 and a gifted military engineer. During the siege, when Rhodes was exposed to powerful artillery fire for the first time, it revealed the city's weaknesses. Thus, when it ended, Pierre d'Aubusson set to work restoring and strengthening the fortifications. His coat of arms may be seen on the city walls in more than 50 places. He considerably increased the thickness of the main wall, widened the ditch and changed the outer profile of the fortress bulwark on the mainland side. Formidable polygonal bulwarks were built in front of the main towers of the posts of Auvergne, England, Aragon and Provence. All these outworks differed in height and shape, suggesting that the Knights experimented in search of optimal protection. This was a consequence of the division of the fortress defences into langues according to nationality. Pierre d'Aubusson, an Auvergnat, had the most powerful bastion (St George) built at the Auvergne Post (see Nossov 2012).
- 70 An experience of the fortifications at first hand need not have been the only way that military ideas spread. In 1501 the military architect, Basilio della Scola, displayed in Venice a wooden model of a fortress with the aim of showing 'what was being done in France, Italy ... and elsewhere'. Basilio had forged his reputation as a gunner in France and was accepted in Italy as a reliable authority on artillery and fortification. He commanded one of Charles VIII's famously effective artillery trains for the invasion of

Italy in 1494, before being employed by the Venetians. It was in this capacity that he was dispatched to assist in the fortification of Rhodes between 1520 and 1522. In 1521, furthermore, Basilio made a model of the fortifications of Rhodes, which was sent to the Pope just before the decisive Ottoman attack. Models, therefore, played a critical role as visual aids and for the migration of architectural ideas (Zorzi 1959: 174, 177; Buisseret 1998: 125; Trim 2003: 120; Pepper 2007: 18). Another example is provided by Vasari in his life of Giuliano da Sangallo who records that Charles VIII was presented at Lyon with a model of a palace made for him by Sangallo (Vasari 1900, II: 216).

- 71 'Château de Zante' (D'Auton 1834, II: 19).
- 72 'Port de Modon' (D'Auton 1834, II: 22).
- 73 'Cité de Canée en Candie' (D'Auton, 1834 II: 23).
- 74 'Ile de Chio' (D'Auton 1834, II: 25).
- 75 'Cythérée' (D'Auton 1834, II: 65).
- 76 In 1474 Francesco di Giorgio Martini began to build the fortress of Sassocorvaro (Rocca Ubaldinesca), and in 1479 the fortress of San Leo. In 1483-6 Giuliano da Sangallo, with Baccio Pontelli, completely rebuilt a fortress in Ostia. The fortresses of Sassocorvaro and Ostia provide an opportunity to see engineers experimenting with the new fortification structures in the form of projections with acute angles turned in the direction of the enemy. In Sassocorvaro the projection was of a triangular shape, and in Ostia it was pentagonal, thus termed a 'protobastion'. In 1487 Giuliano da Sangallo made a plan for the modernisation of the fortress Poggio Imperiale, consisting of ten bastions. In 1492 Antonio da Sangallo began fortifying the Pope's residence, the Castel Sant'Angelo in Rome. He modernised the outer round towers and put low heptagonal protobastions in front of them. In 1494, again for Pope Alexander VI, Antonio began to build a small pentagonal fortress called Civita Castellana. The first half of the 16th century saw bastioned fortifications built throughout Italy (Hale 1977). For an important recent discussion regarding the evolution of the bastion in Italy and elsewhere, see Faucherre, Martens & Paucot 2014
- 77 No visual records of the castle and/or blockhouse in a complete state survive. This is in contrast to a huge volume of depictions of the castle ruins

at Dunbar, many dating to the 19th century, when the site was popularised as a picturesque example of romantic ruins.

- 78 Hale 1977: 10; Hale 1983a; Pepper & Adams 1994.
- 79 This work has not been published. The connection between this manuscript (BnF, fr 12406) and Villebresme's diplomatic visit to Scotland is drawn here for the first time, providing important historical context for this unusual literary work.
- 80 Tournoy-Thoen 1973: 70–1. Macé belonged to a family of retainers of the House of Orléans. For more information on Villebresme, see Chesney 1932: xxi, 11.
- 81 'Rex Scotorum ad Regem Franciscum super Comprehansione in Tractatu Pacis Angliae' (Cotton MS Caligular B VI 104; Rymer 1739– 45, XIII: 508; Brewer 1920, II: 464; Wood 1933: xc; Hannay 1954: 22). An account listed in the Exchequer Rolls for Scotland notes that on 20 September 1515 a payment of £90 was made to 'Willebrand, Ambassador of the most Christian King, bearing the comprehension of peace between us and the English, paid on precept of the Lords of the Council'. This was likely a corruption of Villebresme (Burnett & Stuart 1878–1908, XIV: xxxix, 105–6).
- 82 Brown 1867: n. 638; Hannay 1954: 12, 18, 22, 24, 27, 39.
- 83 BnF, fr 12406 contains the 'Epistres du Turc' (f 1-23V) followed by 'Epistre de Cleriande la Romayne à Reginus, son concitoien' (23v-30v); 'Complainte de madame la douairiere de Nevers' (f 30v-33v); 'Translation historiale de latin en françoys par le dessus nommé Macé de Villebresme' (f 33v-53), and lastly 'Plainte sur le trespas de feu maistre Jehan Braconnier, dit Lourdault, chantre, composée par maistre Guillaume Cretin, tresorier du boys de Vincennes' (f 53r-56v). Villebresme signed the end of the 'Epistres du Turc' with an anagram of his name 'DECLERES IMMVABLE' and his poetic device 'PLUS QUE MOINS' (f 23v). This manuscript is unstudied in the context of Albany, Franco-Scottish relations and crusading interests. It is described as an 'oeuvre etrange' by Chesney (Chesney 1932: xxii). The 'Epistres du Turc' appears to be a propagandic composition by Villebresme, relating fictional letters between the Turc and other great powers, evidently intended to incite crusading fervour.

There are 90 epistles in total. The section from f 33v-53r details a series of historical exemplars extracted from different Greek, Latin and medieval authors. There is a focus on great military leaders and on virtues, such as fidelity, which aid military victory. As this translation by Macé does not appear to survive elsewhere it may also have been composed for Albany and, therefore, provides important evidence of Albany's interest in military exemplars from the classical past.

- 84 The evidence suggests that Albany was greatly preoccupied by ideas surrounding a crusade during this period. His expedition in 1501 appears to have fostered a 'curiosity', as Villebresme puts it, in the affairs of the eastern Mediterranean. Albany's crusading enthusiasms have not previously received scholarly attention. Macquarrie's key text on Scotland and the Crusades 1095–1560, for instance, barely mentions Albany (Macquarrie 1997: 116).
- 85 An illuminated version of this work is kept at the Bibliothèque Nationale, Paris, MS Lat 6067. It contains 51 miniatures attributed to the maître du Cardinal de Bourbon. A draft of the manuscript by Caoursin is still preserved in the Vatican Apostolic Library, BAV MS Reg Lat 1847. This manuscript contains part of the instructions intended for the illuminator. Each monument and each figure is carefully described. The author also indicates that he sent a painting representing the city of Rhodes to serve as a model. Eight miniatures included are topographical views of the city, four of which are general aerials and the other four show details of the fortifications. For the manuscripts see Vaivre & Vissière 2012; Vissière 2015.
- 86 For Albany and the manuscripts he commissioned in 1518 and 1519 see Coombs 2015. Scottish crusading resolve was stressed in Domat's introductory poem in the Liber Pluscardensis translated into French for Albany in 1519: 'Powerful Princes, this present chronicle, Demonstrates by very clear evidence, Of Scotland has [Bruict] sovereign and antique, And is still why by excellence, I write this here solemn work, To demonstrate how the Catholic faith, Was kept and judicial power, Peace and love, equity, temperance, And against Turks often took a lance, Nobles and lay, I beg you, without replica, See this fact, full of

prudence. Domat, the author translator.' Paris, Bibliothèque Sainte-Geneviève, *Chronique d'Écosse & généalogie des rois d'Écosse*, MS 936, f 2v. Bremond Domat.

- 87 Prominent members of this family include Antonio da Sangallo the Elder; his elder brother Giuliano da Sangallo; Antonio da Sangallo the Younger, the nephew of Antonio da Sangallo the Elder; and Francesco da Sangallo, the son of Giuliano.
- 88 Adams notes that the text on the verso is certain evidence of Antonio da Sangallo the Younger's hand (Frommel & Adams 1994, I: 193).
- 89 Frommel & Adams 1994, I: 193. For Fossombrone see Fiore & Tafuri 1993: 224–5.
 A connection to Martini is also drawn by Giovannoni 1959, I: 73, n 1.
- 90 Firenze, Biblioteca Nazionale, codice Magliabechiano II.I.141 f 53r.
- 91 Frommel & Adams 1994, I: 193. Although this connection is noted in Frommel & Adams, no discussion takes place as to if there is a historical basis for such a connection. For Salses see, among others, Potter 2008; Faucherre 2011. There is a fascinating drawing of the castle of Salses in British Library, Cotton MS Augustus I ii 79. The watercolour shows the effects of an artillery siege on the building, reflecting its state before and after being besieged c 1640.
- 92 Auton recounts the siege of Salses in 1503. Albany is not mentioned in his account, however, this does not preclude his involvement or the possibility that he was informed of events there (D'Auton 1834, II: 361–92).
- 93 The drawing is particularly interesting as an example of the sort of collaboration between architect and soldier talked about in treatises of this time. Alberti pointed out in the mid-15th century that 'if you were to examine into the expeditions that had been undertaken, you would find that most of the victories were gained more by the art and skill of the architects than by the conduct or fortune of the generals and that the enemy was oftener overcome and conquered by the architect's wit without the captain's arms, than by the captain's arms without the architect's wit' (Alberti 1565: 6). It is also possible that the drawing provides evidence that Albany was used by the papacy as an informer regarding architectural and military matters in France.

Just as Albany drew on his papal connections to further his own ambitions, the papacy likely considered Albany an important figure with regards to gaining information on French and Scottish affairs.

- 94 The attribution by MacIvor is mistaken (Merriman 1999: 240; MacIvor 2001: 69).
- 95 Solmi 1904, XXXI: 389–410. Documents published by Solmi in 1904 show that Leonardo da Vinci was employed at Amboise in 1518, arranging the spectacles for the double celebration of the baptism of the king's son, Henry II, and the marriage of Madeleine and Lorenzo. Albany is referred to in these accounts.
- 96 Hannay 1954: 68–9. During Albany's visit to Rome in 1520 he not only secured a papal bull confirming his position as Governor of Scotland, but also took the time to attend to some private business and gain permission for himself and his wife to construct the Sainte-Chapelle at Vic-le-Comte (Edinburgh, National Archives of Scotland, CH7/46; Paris, Archives Nationales, J/1130, no. 25).
- 97 Fletcher 2015: 75; 'ex gratia papae quia eius affinis', BAV MS Vat Lat 12276 f 32r-32v. (20v).
- 98 Bergenroth 1866, II: 700.
- 99 This disappointing episode in Albany's career has led to his condemnation by military historians, perhaps none more so than Charles Oman who said of this episode that it was a 'queer choice' to entrust this delicate mission to Albany who had 'twice shown himself unable to manage an army in Scotland'. Oman's damning opinion of Albany is evident throughout this work. He describes him as a 'fickle and in-consequent person, who succeeded in disgusting the Scottish nobility', and describes his military career as 'contemptible'. He notes that at the invasion of Lombardy in 1513 'we are surprised to find on this expedition the wandering Scottish prince John, Duke of Albany, as leader of a compaignie d'ordonnance'. Oman further notes that Albany had a talent for self-promotion not quite met by the reality of his achievements (Oman 1937: 153, 192, 323).
- 100 Brewer 1920, IV: 1010, 1045–6, 1054, 1085, 1102. Knecht notes that he had moved at snail's pace, allowing himself to become embroiled in

Sienese politics. His expedition did, however, help to win the pope over to the French side (Knecht 1994: 216–18).

- 101 It was probably during this period that Albany approached Clement VII with a proposal that Catherine de Medici should marry James V.
- 102 Brewer 1920, IV: no. 1085. They were eventually able to sail for France from Civitavecchia, disembarking at Marseilles in April 1525.
- 103 Bapst 1889: 118; Fletcher 2015: 48. 'The King is informed that William Steward, a servant of the French king, has lately arrived in Scotland with letters to the Scotch king, to whom he brings horses, and swords from Albany, and he has hired masons to repair the castle of Dunbar' (Brewer 1920, IV: no. 3252).
- 104 Brewer 1920, IV: no. 3704. Similar stories also circulated which James V reported to Francis I shortly afterwards, telling how Albany and his kinsman Robert Stuart, seigneur d'Aubigny, had been hiring ships and sending them to Scotland without leave of James (Brewer 1920, IV: no. 3791).
- 105 On 23 September 1530, John Stokesley, English ambassador in France, reported to Henry VIII from Lyons how he had recently 'met the duke of Albany going with threescore horse to fetch his niece from Florence, to be married in France, as is pretended' (Brewer 1920, IV: no. 6633).
- 106 Fletcher 2015: 75; BAV MS Vat Lat 12276 f 151v. (297).
- 107 Fletcher 2015: 75; BAV MS Vat Lat 12276 f 151v–152v. (298 and 300). His ducal status trumped imperial ambassadors, which would have been pleasing to the French king.
- 108 Catherine and her attendants arrived on 6 September at La Spezia. There Catherine and her train waited while Albany picked up Clement VII, accompanied by 13 cardinals and numerous prelates and officials, before returning to Villefranche on 6 October. On 9 October the entire party set sail for Marseilles. Finally on 27 October the marriage contract was signed by Clement and Francis I. The next day the young couple were married by the pope in a ceremony followed by festivities.
- 109 Albany gifted Pope Clement VII an illuminated genealogical manuscript with the aim of promoting the Boulogne and d'Auvergne line, and also serving to strengthen ties and encourage loyalty (BnF fr 5227). Later during

the negotiations surrounding the betrothal of Catherine de Medici, on whose behalf Albany was employed, a series of genealogical manuscripts were produced in order to promote this lineage. In 1531, for example, three copies of a text attributed to Geoffrey Tory were used in relation to the marriage negotiations. It is noteworthy that this text has been attributed to Tory on the grounds of a poetic device at the end '*NE PLUS NE MOINS*', a device very similar to that used by Villebresme in BnF fr 12406, see n 83 (Coombs 2015: n 18; Coombs 2018: 29).

- 110 Hale 1983a: 9. Their report was printed by Beltrami 1902.
- 111 Frommel & Adams 1994, I: 62-3. As Pepper and Adams (1994) note 'under these conditions it became essential to preserve drawings, to keep copies of drawings sent out to members of the family working on different sites, and to archive the survey data brought or sent back from numerous tours of inspection'. The drawing is dated to 1530-3 in Frommel & Adams 1994, I: 193. Certainly the drawing does not predate the construction of the blockhouse at Dunbar. It remains a possibility that Albany himself may have taken notes and sketched details of fortifications, although we have no surviving evidence for this. A fellow Franco-Scottish commander, Bérault Stuart d'Aubigny, noted the importance of drawing and painting in the service of military reconnaissance at this time (see Coombs 2017: 110-15).
- 112 'El quadro de l'Abram vedesti d'Andreino del Sarto si vendé al ducha d'Albania ∇125. Andrane in. Francia per aventura' (Magliabechiana, National Library in Florence. Cl xxxvii N. 303). The letter is published in Gaye 1840, II: 230–1, no. clxix. Mini was the uncle of Michelangelo's pupil, Antonio Mini. Andreino del Sarto is more commonly known as Andrea del Sarto, as he shall be referred to hereafter.
- 113 Vasari 1900, VIII: 291. Vasari uses the word *bozza* meaning either sketch or underpainting.
- 114 Numerous copies and studies relating to this composition survive.
- 115 The *pentimenti* in the Cleveland version of the painting are exceptionally interesting and demonstrate the precedence of this version. Brooks dates this painting to c 1528 (Brooks 2015: 185–95). Shearman dates this version

to c 1526–9. He dates the Dresden version to c 1529 and the Prado version to c 1529–30 (see Shearman 1965: 269–70, 280–2).

- 116 If this identification is correct, Vasari must have been mistaken in stating that it was sent to Naples.
- 117 There was after all another version of the painting originally commissioned for the King of France by della Palla (the Dresden version).
- 118 'Douze ymages de terre cuyte des douze apostres Nostre Seigneur' (Archives Nationales, Minutier Centrale, CXXII, 15; 1529, 23 August). This document is transcribed in Leproux 2004: 80.
- 119 For an illustration of the sculptures, see Coombs 2018: 187.
- 120 See Coombs 2018. Leproux attributes the sculptures to Rustici (Leproux 2004). This is repeated by Noblet 2009: 280. Doubt has been cast on this attribution by Sénéchal (Sénéchal 2007: 245-8). However, he concedes that they were likely executed in Paris by a workshop run by an Italian. An attribution to Rustici, he notes, is feasible if we factor in rapid execution and the participation of assistants. It seems likely, given the great expense incurred in transporting the sculptures, that Albany would have commissioned them from an eminent artist like Rustici, even if they were hurried and aided by assistants in their final execution. The sculptures have undergone extensive restoration over the years. This is detailed by Leproux 2004: 75-91. Rustici left for France to work in the service of Francis I in 1528.
- 121 Transporting these figures almost 300 miles from Paris to Vic-le-Comte was an enormous undertaking for the period.
- 122 No early description, or inventory, of the Sainte-Chapelle survives to prove if the del Sarto painting was originally displayed there.
- 123 This painting is now held in the Louvre: Paris (Musée du Louvre, dép des Peintures, RF 1766). A painting of *The Nativity* by Ghirlandaio is also still held in the Sainte-Chapelle at Aigueperse (Aigueperse, Eglise Notre-Dame, IM63001643).
- 124 Coombs 2013; Coombs 2015; Coombs 2018.
- 125 Bibliothèque Sainte-Geneviève, Paris, Chronique d'Écosse & généalogie des

rois d'Écosse. MS 936 (Paris Manuscript); Koninklijke Bibliotheek, The Hague, *Généalogie de Madame Anne de la Tour, princesse de l'Écosse*. KB, 74 G 11 (Hague Manuscript). For these two manuscripts, see Coombs 2015; Coombs 2018.

- 126 'L'an mil, iiii^c iiii^{xx} et deux en julhet, Le huictiesme nas quict sur terre, D'albanie enfant joliet, Le quel tra par mer conquerre, Escoce aussi angleterre, Et les mectra en subjection, Par force d'armes et de guerre, Il en prandra pocession' (The Hague, KB, 74 G 11: f 52v. Bremond Domat 1518).
- 127 Venus is likely described as the 'principal planet' because the commission was an affectionate commission for his wife, Anne de la Tour. 'La prognostication de la nativite du ... prince Jehan duc dalbanye esperulee sur Les planectes, VENVS. planecte principalle, Gouvernant sa nativite, Luy promect puissance papalle, Venant de la divinite, Absolue auctorite, Double couronne deux foys Roy, Mars le menace d'aversite, Aver ung peu de desarroy, SOL. planecte tresmagnificque, Qui gouverne le cueur des princes, Comme uoix digne et angelique, Luy donne royaulmes et provinces, Juppiter ses ennemys mynces, Tiendra et luy donna puissance, Lheur et le don des douze nymphes, Dont parmendra a ex..., SATURNE luy est mel gracieux, Et engendrera quelque noyse, Mais mercure le gratieux, Des fera tout plaise ou nom plaise, Luna fera tout a sonaise, Luy promectant bonne fortune, Mais qua mynerve ne des plaise, Contradiction navra aulrune' (The Hague, KB, 74 G 11: f 53r. Bremond Domat 1518).
- 128 This section of the text is badly worn and difficult to make out.
- 129 The Hague Manuscript dates to 1518, one year earlier than Paris Manuscript.
- 130 Paris, Bibliothèque Sainte-Geneviève, Chronique d'Écosse & généalogie des rois d'Écosse, MS 936, f 2v. Bremond Domat 1519.
- 131 Efforts to retrieve Dunbar Castle from Albany's possession persisted. Only in 1536, on Albany's death, did control pass to the Scottish Crown. One of the clauses of James V's marriage treaty with Marie de Vendome stipulated that the French garrison relinquish Dunbar (Stuart 1940: 188, 208–9, 211, 255, 260, 276, 278–9; MacIvor 1981: 122, 128; Merriman 1999: 241).
- 132 See note 93.

- 133 See note 64.
- 134 MacIvor 1981: 113. MacIvor notes that a photogrammetric survey may facilitate a better understanding of the true profile of the blockhouse.

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The history of the Auldjo Jug 1830–60 – a review and critique: was Sir Walter Scott the real benefactor?

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ABSTRACT

The so-called 'Auldjo Jug' is an extremely important cameo glass artefact from Pompeii in the British Museum. The extant pieces of the lower part and of the upper part of the jug came to the Museum from two British owners as a result of a purchase and a bequest. Exactly how the parts came into the possession of the seller (Dr Hogg) and the bequeather (Miss Auldjo) has not been clearly established. Current theory proposes that two British residents of Naples received the jug pieces from two different sources at different times. Here the evidence is examined in relation to the people in Naples around the time when the jug was excavated. This article suggests that it would seem more feasible that Sir Walter Scott, when he visited in Naples in 1832, was presented with all the excavated pieces, and that he then, on his departure, divided the fragments and passed them on to two people in Naples with whom he was well acquainted and to whom he owed a debt of gratitude.

INTRODUCTION

In November 1830, when the young Ferdinand II succeeded his father as King of Naples,¹ excavation had just begun on the house in Pompeii which came to be known as the House of the Faun. As work on the site continued through 1831, it produced some quite exceptional finds including not only the statue of the Dancing Faun, after which the house was named, but also some fine mosaics, culminating in October 1831 with the finest of them all, the Alexander Mosaic, apparently showing Alexander and Darius in combat at the Battle of Issus. Also found on the site were the broken fragments of a blue and white glass jug. Although much less obviously spectacular than many of the other finds, these glass fragments must have been immediately recognised as an exceptional find, for they were neither of blue glass with white decorations, nor of blue and white marvered glass, but of cameo glass.² The early cameo glass vessels 'were, and still are, reckoned the ultimate achievement of glass incision of all times'.³ Complete, or almost complete, pieces of Roman cameo glass are extremely rare fewer than 20 are currently recorded.⁴ Of these, five were found at Pompeii and, of these, the jug subsequently reconstituted from the glass fragments excavated at the House of the Faun was the first. By 1860, some 30 years after its excavation, these fragments had found their way to the British Museum and had been given the name 'The Auldjo Jug' (BM 1859,0216.1).⁵ In the Museum's Pompeii and Herculaneum exhibition in 2013, the jug featured as one of the few important pieces from the Museum's own collections. This paucity of objects should not be attributed to the Museum's acquisition policy, but to the very sharp control maintained by the Kings of Naples over all objects found at Pompeii and Herculaneum. Finds from the two sites were routinely transferred to the Royal Museum in Naples.

As a result of the strict Royal oversight of excavations carried out at Pompeii and Herculaneum, all finds were carefully recorded, and yet, for some reason, no official record



ILLUS 1 The Auldjo Jug (H: 22.8cm, Diam: 14.3cm). British Museum permitted use under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0) licence

appears to have been made of the discovery of the cameo jug pieces in the House of the Faun. Thus the first publication of the jug's existence derived from a short work of 1836 on ancient glass by the Prussian antiquarian Heinrich von Minutoli.⁶ Here he related how, on a visit to Naples in 1834, he was shown roughly half the jug which the owner had 'bought' (erstand) and was told that a lady owned another substantial part that she had been given by 'an important person' (einer hohen Person). He described how the owner had a skilled draughtsman make a sketch of how the whole jug would have looked by replicating patterns where appropriate. According to Minutoli therefore, the fragments of this rare cameo glass jug had been somehow shared out between two individuals shortly after being excavated. This division of the pieces would seem to be confirmed by the fact that the British Museum acquired them in two tranches: pieces from the base of the jug were purchased from Dr Hogg in 1840, and some of the upper portion of the jug, including the handle and spout, were received in a bequest from Madeline Auldjo in 1859.

THE CURRENT POST-EXCAVATION NARRATIVE

In seeking to establish the post-excavation history of the jug, a clear line of investigation presents itself. Although the names of the two last private owners of the jug pieces are known (Madeline Auldjo and Dr Hogg), it is essential to establish precisely who they were and then consider how, when and why they might have come into possession of pieces of such a precious object. Some plausible explanation also needs to be put forward as to why the discovery of the pieces at the House of the Faun was not officially recorded. Over the last century and a half, attempts to elucidate the jug's postexcavation history have been made. The resulting narrative, some of which comes across as inadequate or implausible, will be critically reviewed in this paper and an alternative narrative put forward.

In 1983, some 130 years after the acquisition of the jug by the British Museum, Donald Harden provided his summing up of its postexcavation history.7 According to Harden, the base pieces were bought from Dr J B Hogg and the neck and handle were bequeathed by Madeline Auldjo. The purchase record indicated that Hogg sold seven fragments and, as there are 15 fragments in all, he assumed that there were eight fragments in the Auldjo bequest. He pointed out that at the time of Madeline's death at Noel House, Kensington, her uncle John was also living there, and that this cohabitation may have resulted in Bulloch wrongly suggesting that John Auldjo, not his niece, was the owner of the jug handle section.⁸ He noted that, according to Kisa (1908), the 'important person' was the Prince of Capua (ie Prince Charles, brother of King Ferdinand II) and that therefore it must have been he who gave the upper section of the jug to Madeline.9 Dr Hogg must have either acquired his pieces from Minutoli's 'present owner' or possibly have been that owner himself.

Moving on from this rather limited and sketchy account, let us consider how the narrative of the jug's route from excavation to the British Museum has been adjusted in more recent publications, in particular: Roberts et al (2010: 43-7), Roberts (2013: 243-4) and Jamieson (2009: 136-8). In these works, more useful detail is provided on the Auldjo family. In particular, it is proposed that Madeline Auldjo, who was born in 1830, would have inherited the handle section from her mother Annie Maria who, with her husband Richardson Auldjo, had become resident in Naples in 1829.¹⁰ Here they were joined by Richardson's brother John - who had achieved some measure of fame through his ascent of Mont Blanc in 1827 and more especially through the publication of his account of it a year later.¹¹ The Auldjo brothers, although born in Canada, were the sons of Alexander Auldjo of Aberdeen and descended from the Algeos who had arrived in Scotland from Italy in the mid-15th century. It is suggested that John Auldjo was, after all, the probable beneficiary of Prince Charles's gift, and that he then passed it on to his sister-in-law, Annie Maria.

To explain how John might have come to be the original recipient, it was noted that Prince Charles, the King's brother, visited the Pompeii storeroom on 11 June 1833 and picked out some objects to take away: 'As well as some bronze vessels and figurines and some pottery vases, he chose some pieces of glass, one of which was ... the mouth and handle of a nasiterno, blue in colour with white decoration.'12 The latter is assumed to be the handle piece of the Auldjo Jug which was subsequently given by the Prince to John. Why to John? 'In the same year [1833] John Auldjo published a volume entitled Sketches of Vesuvius (Longman, London). The volume was dedicated to His Royal Highness Charles, Prince of Capua ... It is tempting to see some form of aristocratic gift exchange linking the book and the neck of the jug.'13

Much more hesitation is shown in the identification of Dr Hogg. The original British Museum documentation recording the acquisition of the jug pieces in 1840 denoted the seller simply as 'Dr Hogg'. At some subsequent point, the initials J B were inserted in the records and a former curator suggested this might be John Hogg (1800-69), a Cambridge academic who had written on archaeological subjects. Yet this John Hogg had neither a doctorate nor a second initial 'B'. It was therefore finally, but tentatively, proposed that 'the balance of probability suggests that Dr Edward Hogg, physician, antiquarian and traveller, was the owner of the base of the Auldjo Jug'.¹⁴ To explain how Hogg might have obtained his pieces, it was noted that when Sir Walter Scott was in Naples in early 1832, Edward Hogg had accompanied him on some of his expeditions, and therefore it was recognised as a possibility that 'Hogg, or even the idolised Scott himself' might have come into possession of the lower part of the jug.15

A CRITIQUE OF THE NARRATIVE

The current theory, as outlined above, proposes therefore that the two separate tranches of an important piece of Pompeian cameo glass acquired by the British Museum in 1840 and 1859

had come into the possession of two different British owners from different sources at different times. Expressed thus in simple terms, it stretches credibility and therefore calls for sharp scrutiny. Let us consider the alleged involvement of Prince Charles. An examination of the items (as listed by Fiorelli 1860-4, vol II: 275) which he removed from the storeroom on 11 June 1833, shows that he came away with over three dozen objects. It is true that one of these is a blue and white jug spout and handle, but this is just one object on the list which included a small statuette holding a theatrical mask, a small ox's head with horns, a small goose preening itself, carbonised nuts and a piece of carbonised bread. A consideration of the whole list surely shows that Prince Charles was not there to select gifts for his friends, but had some wider purpose, perhaps a small palace exhibition of a range of ordinary objects found at Pompeii or to provide illustrative material for some publication.

Whatever may have motivated Prince Charles to make his visit on 11 June 1833, there are overwhelming reasons why one should not assume, as previous writers about the jug appear to have done, that the blue and white jug handle and spout he removed was the handle and spout of the Auldjo Jug. First, it would surely have been indicated in the text that this, a piece of cameo glass, was something extraordinarily rare and special. Second, when pieces of cameo glass, as opposed to ordinary glass, were described in records of the time, they were clearly distinguished by the inclusion of the word (basso) rilievo;¹⁶ thus here the description as it stands would apply more appropriately to a vessel of blue and white marvered glass or blue glass with white tracings, ie the sort of coloured glass much more widely used at the time. The original description made directly after Prince Charles's visit states that the glass was blue, which would not be accurate for a cameo glass object which is of two colours.¹⁷ Third, no reference is made to the base pieces in Hogg's possession. It is inconceivable that the superintendent of excavations did not know of their existence or would have been unaware of the link between the handle and spout section and the extant base pieces. Fourth, the list makes it clear that the fragment was a single

piece – whereas if Harden is right in saying that Madeline Auldjo's bequest consisted of several pieces of the upper part of the jug, the archive record does not tally with the pieces held by the Auldjos. Fifth, whatever motivated Prince Charles to make his extraordinary visit to the storeroom to pick out the objects on the list, the fact that not one of them has emerged and been identified since is a strong indication that they all had a single, though unknown, destination. If the assumption is persisted in that the blue and white jug handle and spout in the list could only have been the handle and spout of the Auldjo Jug, why was it this item, rather than any other, that the Prince chose to give to John Auldio? Even if one ignores that royalty would never normally make a gift of an isolated fragment, it would seem an extraordinary coincidence that the Prince should choose to give to John Auldjo a part of that very same jug of which the other extant parts had some time before come into the hands of another British owner. As there can have been no way of being in possession of a Pompeian antiquity more legitimately than having received it as a gift from a member of the Neapolitan royal family, we may furthermore ask why the donor was not openly acknowledged, either to Minutoli or subsequently.

We also need to question why Prince Charles had any reason to make a gift to John Auldjo. When Prince Charles sanctioned Auldjo to dedicate his book to him and permitted it to be printed, an authorisation which would have passed through official channels, it was the Prince who was graciously doing a favour to Auldjo, not the other way round. In such circumstances, royalty might have magnanimously recognised the dedication with some formal gift in return. However, it is highly implausible that Prince Charles personally went into the Pompeii storeroom - over a year after the dedication - in order to extract the jug handle as such a formal return gift, and all the more so as John Auldjo was not then in Naples. He had left the city at the beginning of April 1833 for an expedition to Constantinople and only returned in mid-August. Certainly, the notion that Prince Charles and John Auldjo were engaged in 'some form of aristocratic gift exchange linking the book and the neck of the jug',18 should be rejected - not least because John Auldjo was neither aristocratic nor titled. It seems highly unlikely that they shared any close personal acquaintance with each other - if they did, it is strange that Jamieson (2009), in his biography of Auldjo, gives no evidence for it. However, one must further question whether John Auldjo played any direct part in the jug's history as the evidence points clearly to it having been Annie Maria Auldjo, not her brother-inlaw, who from the first was the possessor of the handle portion of the jug.19 There is certainly no evidence that Prince Charles and Annie Maria knew each other, let alone in such a way that the Prince would have been inclined to make her a gift.

Whereas writers on the jug seem to have been ready to make assumptions about the identity of the piece withdrawn from the storeroom by Prince Charles and about the relationship between the Prince and John Auldjo, they seem to have been unnecessarily tentative on the identity of Dr Hogg. The person sometimes referred to as 'a Dr Hogg' can have been none other than Dr Edward Hogg (1782–1848). He had received medical training at St Bartholomew's Hospital²⁰ and subsequently practised in Hendon. In the late 1820s, for health reasons, he came to reside in Naples. He would therefore have been in the city when the jug was excavated. There is no evidence whatsoever of any other Dr Hogg having been in Naples over this relevant period. As well as this external evidence, there is also clear internal evidence of his identity. In 1836 the British Museum purchased a Greek Psalm fragment from Dr Hogg. This papyrus (British Museum Papyrus 37) can be linked incontrovertibly to Dr Edward Hogg.²¹ Thus when, in 1840, Hogg sold further items to the Museum, mainly from Egypt but including the Jug pieces, it is understandable that his name was entered simply as 'Dr Hogg' in the register.²²

Before evaluating the current official narrative and putting forward an alternative, it would seem useful to look more closely at the evidence of Minutoli. The Prussian antiquary wrote about his inspection of the base of the jug in 1834. He indicates that the present owner had 'bought' (*erstand*) his pieces. Schulz, in his comments on the jug in 1839, wrote of its being broken into two pieces, one part being 'sold' (fu venduta), the other given by the Prince of Capua to an English lady.23 Kisa also interprets erstand literally as 'having acquired them on the open market'.²⁴ These interpretations are not plausible. All objects found in Pompeii belonged to the royal family and to remove them and sell them on was absolutely forbidden.²⁵ If the pieces of such an important find had been obtained illegally, it is unimaginable that Minutoli would have been shown them. In addition, there is no evidence that Hogg was a collector of Roman antiquities: apart from the Auldjo Jug pieces, the only Roman item he sold to the British Museum in 1840 was a mould-made pottery lamp.

Minutoli indicated that the present owner had roughly half the jug and that a lady had another substantial part. He describes what 'the present owner' had done to reassemble all the extant pieces and his getting the help of a 'skilled draughtsman' to show how the complete jug would have looked. Minutoli's failure to name Edward Hogg as the owner could derive from the fact that he probably did not meet him. At the beginning of March 1834, Sir William Gell wrote to Lady Blessington to introduce her to Edward Hogg, who was about to set off on a short business trip to London.²⁶ Minutoli left Rome for Naples at the end of March and stayed ten weeks.27 If Hogg had already gone, his part of the vase must have been shown to Minutoli by someone else, quite probably Sir William Gell. Indeed, Gell was the person most likely to have informed Minutoli of Hogg's possession of the jug pieces; he was on close terms with Hogg, while being acquainted with Minutoli.28 The vagueness of language in relation to the Hogg portion of the jug also applies to the handle and spout portion. Minutoli does not indicate that he met the owner, nor indeed that he actually saw the handle and spout part of the jug. For the illustration in his book of the reconstructed jug, an important factor in diffusing knowledge of the jug's existence, he could, for the handle section, have depended on the sketch which Hogg had commissioned.29 Certainly, some 20 years later, Trollope, who had access to both the Hogg and the Auldjo pieces, though not together, used the sketch shown to him by Annie Maria Auldjo to help him create the frontispiece of his *Illustrations of Ancient Art* (1854). It is surely not insignificant that both the Minutoli and the Trollope illustrations show the jug from the same angle, ie presumably that shown in the sketch.

Whether or not Minutoli met either of the owners of the jug pieces in 1834, there is no doubt that, either through discretion or ignorance or both, he fails to identify either of the owners and is vague about how and through whom they obtained their pieces. The lack of a common language with his host, whether Hogg or someone else, may also have contributed to Minutoli's limited understanding of the manner in which the pieces had been acquired. By contrast, he is firm in his assertion that the jug was found in the House of the Faun – presumably because he had been told this as fact and had no reason to doubt it.³⁰

In summary, the current 'official' narrative is vague about the identity of Hogg and how he might have obtained his pieces: it suggests that the blue and white nasiterno handle and spout, one item amongst many which Prince Charles retrieved from the storeroom, could only have belonged to the Auldjo Jug, it proposes that Prince Charles had some sort of relationship with John or Annie Maria Auldjo which led him to make a gift, and then, of all the gifts he might have made, he chose a fragment of a broken jug - not of any broken jug, but of that very same cameo glass jug of which Edward Hogg had the lower portion. The narrative moves from the vague through the questionable to the downright incredible.

WAS SIR WALTER SCOTT A KEY PLAYER? AN ALTERNATIVE NARRATIVE

A very different and much more plausible narrative arises if we ask the question as to whether Hogg and the Auldjos had anything in common which might have led them to come into possession of pieces of the same jug from the same source at the same time. This question can be answered with conviction in the affirmative: both parties had a close relationship with Sir

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ILLUS 2 Heinrich von Minutoli's illustration of the jug in his work of 1836, plate I in table III. Reproduced by kind permission of the Syndics of Cambridge University Library (Classmark A.16.11)

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ILLUS 3 Edward Trollope's illustration of the jug in 1854. Reproduced by kind permission of the Syndics of Cambridge University Library (Classmark Z400.b.85.1)

Walter Scott during his visit to Naples in the early months of 1832. If Sir Walter had been given the extant jug pieces, it is quite possible that he might have passed these on to them.

Let us develop this idea. Sir Walter Scott was a major European celebrity. Not only were his works being widely read throughout Europe, but several of them had been adapted for the operatic stage. In Naples, Rossini's La donna del lago, Donizetti's Elisabetta al castello di Kenilworth and Pacini's I fidanzati had all been premiered at San Carlo. With such a reputation, it is hardly surprising that his arrival in the city attracted the attention not only of the British community and of the local literati, but also of the young King of Naples, Ferdinand II, himself.³¹ Thus we find Scott invited to attend the King's birthday reception on 12 January 1832 and less than two weeks later being formally presented to the King. In Pompeii, an excavation was opened up for him by royal command.³² He was permitted to drive through the streets of Pompeii in a carriage, a privilege normally reserved exclusively for the Royal Family. Later, when he found a manuscript of which he desired a copy in the Royal Library, the King ordered it to be sent to his house so that he could have it copied there. The notion that Sir Walter should have come away from Pompeii with a recently excavated royal gift from the House of the Faun, where he had admired the Alexander Mosaic, seems very reasonable. All the extant cameo glass pieces of the jug, even before their reassembly by Hogg, would have been recognised as a remarkable and rare find and a gift worthy of such a celebrated visitor. That the jug pieces do not appear to have been recorded in the official inventory of finds is surely also compatible with a sudden royal intervention to make a gift of appropriate quality.³³

If Sir Walter was the recipient of the jug pieces, further questions are raised: why would he have given them away, why would he have divided them up in order to give them to two separate individuals and why would he have chosen to give them to Edward Hogg and a member of the Auldjo family? Let us consider each of these in turn. Apart from the Alexander Mosaic in the House of the Faun, Sir Walter seems to have taken little interest in Pompeii or the Classical world. Sir William Gell remembered how he sought 'to call his attention to such objects as were the most worthy of remark. To these observations, however, he seemed generally nearly insensible, viewing the whole and not the parts, with the eye not of an antiquary but a poet, and exclaiming frequently "The City of the Dead", without any other remark'.³⁴ Elsewhere, Gell writes that 'many of his friends ... had frequently tried to drive classical antiquities, as they were called, into his head, but they had always found his "skull too thick".³⁵ In the excavation which had been created for him, Scott was not, according to Henry Baillie, in the least interested.³⁶

The failure of Scott to become involved in the Classical world so tangibly reconstructed and displayed in Pompeii and surroundings may seem extraordinary in such a committed and experienced historian and antiquarian. However, the Scott who arrived in Naples at the end of 1831 was a man in broken health. He had suffered a couple of strokes and he had made his journey to Naples for health reasons, not for cultural ones. When Marianne Talbot visited him on Christmas Day, she found that he could hardly rise from his chair to welcome her, and his speech so defective that she could hardly hear him. When later that day she had dinner with the Scott party she reflected: 'How sad to see genius & imagination brought so low – for a man in the state Sir Walter is in throws a chill over a whole society.'37 A few days later she commented rather more positively: 'His memory is as accurate as ever for distant events connected with Scotland or Litterature but faulty for everyday events.'38 During Scott's residence in Naples, Sir William Gell, his regular companion on excursions and visits, soon came to realise that Scott's physical and mental health prevented him from engaging directly with the new and different experiences presented by the remains of the Ancient World. He noted how Scott often failed properly to appreciate the details of the Classical sights he was being shown for their own sake, but related them to his imagined medieval world or to his beloved Scotland. He commented that Sir Walter's 'only pleasure in seeing new places arose from the poetical ideas they inspired, as applicable to other scenes with which his mind was more familiar³⁹ and came to recognise that Scott's mind was dominated by the interests and preoccupations of his anterior life, describing him as 'the Master Spirit of the history of the Middle Ages, of feudal times, of spectres, magic, abbeys, castles, subterraneous passages, and preternatural appearances'.⁴⁰

In contrast with his failure to engage with the Roman world, the sites and monuments of which Gell showed him almost every day, Scott showed enthusiasm for those subjects which had traditionally fired his imagination. During his residence in Naples he continued to work on a romance about Malta, based on the defence of the island by the Knights of the Order of St John when besieged by Suleiman the Magnificent in 1565. As it was completed, parcels of manuscript were sent from Naples to Robert Cadell, his Edinburgh publisher.⁴¹ At the same time as working on his draft of The Siege of Malta, Scott set about forming a collection of Neapolitan and Sicilian ballads and broadsides, and began sketching out the tale of a captain of banditti named Bizarro. Scott also contemplated both a poetical work on the slaving of the Dragon of Rhodes by Dieudonné de Gozon, Knight of the Order of St John, and a romance on the subject of Queen Joan of Naples. The latter subject had been inspired by his visit to the palace of Poggio Reale and his noting that Queen Joan 'was to a certain degree in the predicament of Queen Mary of Scotland, being held by one party as the model of female virtue, and by the other as a monster of atrocity'.⁴² In visits to other places with a medieval or supernatural connection, Scott also expressed his enjoyment: to the Church of San Domenico Maggiore with its array of coffins, including those of ten princes of Aragon; to the Casa dei Spiriti,43 where in one room a spectre robed in white was supposed to appear; and to the Benedictine monastery at La Cava where he was shown ancient manuscripts and was particularly struck with a book containing pictures of the Lombard kings. Gell had to acknowledge that 'Sir Walter was more pleased with the Monastery of La Cava than with any place to which I had the honor to accompany him'.44

During his residence in Naples, Scott, in spite of his poor physical state, was still able to take an enthusiastic interest in places and objects which were shown to him, but these had, directly or through his imagination, to fit into the cultural landscape in his mind created over previous decades. If Scott had been the recipient of the pieces of a rare Roman cameo glass jug, it seems unlikely that he would have responded with any heartfelt enthusiasm to the gift, and there is certainly little reason to believe that he would have valued them so highly as to wish to retain them or seen any need necessarily to keep all the pieces together.

Why he might have decided to donate pieces of the jug to Edward Hogg is easily explained – he was under a particular obligation of gratitude to him. Edward Hogg not only accompanied Scott on some of his excursions, but helped to procure the documents which Scott wished to have copied, and supervised the copying process. Above all, he seems to have taken on the role of personal physician to Scott for the duration of his stay in Naples. 'Dr Hogg lives with the Scott family', Marianne Talbot reported, adding that he commented to Gell: 'The[y']re quite an ordinary Scotch family in their interior. They storm & scold & swear!'45 When Gell was worried that Scott might, on departure, accidentally pack some of the books which he had lent him, it was to Hogg that he wrote to prevent this happening.46 Scott was attended also by Dr Roskilly, the British doctor who had been resident in Naples since 1815, but for Scott, who had suffered a series of strokes, who was unsteady on his feet and whose memory and hearing sometimes failed him, having a doctor in daily attendance must have been extremely reassuring to him and his family.

With the Auldjos, Scott was clearly on friendly terms. John Auldjo presented a copy of his book on his ascent of Mont Blanc to Sir Walter even before first meeting him on 24 January, a month after the Scotts had arrived in Naples.⁴⁷ Thereafter he also accompanied Scott on some of his excursions, for instance, twice to Poggio Reale, becoming 'intimate with him' for the remainder of his stay.⁴⁸ As well as his general support to Scott, Auldjo made one further gift to him on the eve of his departure for Rome: his newly published book on Vesuvius with handcoloured illustrations.⁴⁹ As far as Annie Maria is concerned, she made one of the very last drawings of Scott. It is currently held by The Writers' Museum in Edinburgh⁵⁰ and is captioned with place and date (Naples, April 1832) along with Scott's signature.

At some point before the Scotts left Naples, might not the jug pieces have been shared out between John Auldjo or, the evidence suggests, his sister-in-law Annie Maria, and Edward Hogg as a gesture of thanks for kindnesses or perhaps, more mundanely, to save having to carry them back to Scotland? After all, the jug was not complete and even part of such a jug would be sufficient to evoke a vision of the 'City of the Dead'. As far as Hogg is concerned, it has indeed been suggested that his pieces of the jug might have been linked in some way with Sir Walter Scott's visit.⁵¹ If the jug pieces had been presented to Sir Walter as a gift, it would seem totally inappropriate to have held back a major part. It would also seem strange if fragments had been given away from an unfinished excavation. Bearing in mind Sir Walter's lack of interest in Roman antiquities and the disorganisation of his household,52 if Sir Walter had been in possession of all the extant pieces of the jug, it would seem perfectly plausible that he might have divided them between Hogg and the Auldjos. Both the subsequent owners had contact with Sir Walter in the days preceding his final departure from Naples.53

The fact that of the 15 extant pieces, Hogg apparently came into possession of seven and the Auldjos of eight suggests a deliberate sharing.

CONCLUSION

To explain how two residents of the British community in Naples in the early 1830s came to be in possession of separate parts of the first more or less complete Roman cameo glass artefact to have been discovered in Pompeii, the theory that they both received them through Sir Walter Scott, who in turn had received them with royal consent, is a highly plausible one – but the only evidence to support it is circumstantial. Scott was in Naples over part of the period when the House of the Faun was being excavated and where the jug was found. When Scott visited Pompeii in February 1832, his British friends may have realised that he was more interested in medieval than Classical antiquities, but this predilection may not have been apparent to his Neapolitan hosts. It would seem entirely appropriate that such a celebrity, who had taken particular interest in the Alexander Mosaic in the House of the Faun and shown pleasure during his visit, should have been presented with a gift of quality from the site. Scott was acquainted with the Auldjos and Hogg and was indebted to both of them, particularly the latter. In 1834 Edward Hogg was in possession of pieces making up a substantial portion of the base of the jug and by the same date the Auldjo family had another portion, including the handle and spout. As it stands, the theory that Prince Charles fetched the handle of the jug from the storeroom in 1833 and gave it to John Auldjo is highly implausible. Greater credence could be given to the theory that it was the handle matching up with Hogg's pieces that Prince Charles fetched from the storeroom if it could be shown he had been requested by a member of the Auldjo family to get the handle which he or she knew to be there; in view of the difference in social status, such a request would seem highly unlikely. The fact that already in 1834 Minutoli was informed that the handle section of the jug was in the ownership of a lady would indicate that Annie Maria Auldjo - rather than her brother-in-law John - was the initial recipient of the handle. However, because the Royal Family of Naples closely guarded and valued all artefacts found in Pompeii, it is simply not credible that either Edward Hogg or a member of the Auldjo family, both socially insignificant, could themselves either have been the direct recipient of such an important Pompeian artefact or have acquired the pieces through unauthorised channels.

Considering the above evidence, it would seem a strong possibility that Sir Walter Scott was donated all the available pieces of the jug and that these were subsequently passed on to Edward Hogg and Annie Maria Auldjo. If so, there would be a strong case for renaming the jug the 'Scott Jug'. Of course, until further decisive evidence emerges, no firm conclusion can be drawn. In the interim, it is unfortunate that the name of Edward Hogg is not more overtly linked to the jug. This neglect may have been caused on the one hand by the uncertainty displayed by British Museum curators over a long period of time in clearly establishing his identity, and on the other, a failure to recognise the key role that Hogg had played in 1832-3 in assembling all the extant pieces and having a drawing done of the whole jug. It was this drawing on which Minutoli based the illustration in his publication of 1836, and, in turn, this publication which first informed the antiquarian world of the existence of the jug and of its being in the possession of two British owners. The drawing also shows that, from the 1830s, the Auldjos were fully conscious of the location of the lower portion of the jug of which they possessed the other extant pieces, including the handle and spout. After Hogg sold his jug pieces to the British Museum in 1840, third parties became aware that the missing handle portion was in the possession of the Auldjos, now resident in London, thereby resulting in the Auldjo name being attributed to the jug. In particular, Apsley Pellatt's publication, Curiosities of Glass-Making, in 1849 used Minutoli's drawing on the vignette of the title page and mentioned the Auldjo ownership in the text. A review of the Curiosities in the Gentleman's Magazine⁵⁴ reproduced the vignette and called the object the 'Auldjo Vase'; it noted the two locations of the parts and added that it was a 'disunion the continuance of which is much to be deprecated'. In his Illustrations of Ancient Art of 1854, Edward Trollope titled the frontispiece illustration of the jug 'The Auldjo Vase' and described it, sonamed, in the text. Thus when, through the bequest of Madeline Auldjo, the handle section finally came to the British Museum, along with a considerable number of other objects from her mother's collection, it is understandable that the Museum 'rewarded' the Auldios by maintaining the name which had already been attributed to it. This 'reward' was made at the expense of Edward Hogg who first united the pieces and whose drawing, through Minutoli's description and illustration, first publicised both the existence and the appearance of the jug.

NOTES

- 1 The Kingdom was officially known as the 'Kingdom of the Two Sicilies'.
- 2 Decorating an object made of cold glass requires no glass-making skills. Marvering glass involves the fusion of two or more colours of molten glass which can be made to create patterns similar to those found in marbled paper. Cameo glass requires the layering of glass of one colour onto glass of a different colour followed by the carving away of the upper layer in order to produce patterns or figures. For a consideration of the techniques used, see Harden 1983: 50–3 and Newby & Painter 1991: 26–9.
- 3 Lierke 1999: 67.
- 4 Fifteen major objects are listed with descriptive details in Painter & Whitehouse 1990: 138–62, and 16 in Newby & Painter 1991: 19–25, where the base-disc of the Portland Vase is added as a separate item. One further Roman cameo glass object, a vase of mysterious provenance, has recently come to light: see Haspelagh 2015: 138–45.
- 5 From the mid-19th to the mid-20th century, the object was usually called the 'Auldjo Vase'; in recent literature, it is referred to as the 'Auldjo Jug'.
- 6 Minutoli 1836: 3-4.
- 7 Harden 1983: 48-50.
- 8 Bulloch 1934: 330.
- 9 Kisa 1908, vol II: 584.
- 10 I have used what I consider to be the correct appellations of the Auldjo family. The two Auldjo brothers – Thomas and John – both had the second name Richardson, but Thomas used Richardson as his identifier. As a widow in London, Annie Maria was known as Mrs Richardson Auldjo. The names Annie Maria and Madeline are spelt thus in both of their wills.
- 11 John Auldjo's Narrative of an Ascent to the Summit of Mont Blanc (London, 1828) supplemented with landscape engravings, smaller lithographs of the climbing party plus maps and diagrams brought the feat of climbing the mountain to the attention of a wider British public.
- 12 Roberts et al 2010: 44. The full list of objects taken by Prince Charles can be found in Fiorelli 1860–4, vol II: 275. A *nasiterno* is a jug with a trefoil-shaped spout. It was not an uncommon form of jug at the time.

- 13 Roberts et al 2010: 44. In fact, the *Sketches* with the dedication were first published in Naples in 1832. A second edition was published in London in 1833.
- 14 Roberts et al 2010: 46.
- 15 Roberts et al 2010: 46.
- 16 See Fiorelli 1860–4, vol II: 264; Schulz 1838: 194–5 and Schulz 1839: 85.
- 17 See manuscript report presented by Secretary of State Nicola Santangelo dated 17 June 1833 with details of the objects removed by Prince Charles from the storeroom which he had received from the superintendent of excavations (Santangelo 1833).
- 18 Roberts et al 2010: 44.
- 19 When he first publicised the existence of the jug, Minutoli stated that a substantial part of it was in the possession of a lady. Some 20 years later, Edward Trollope acknowledged the kindness of Mrs Richardson Auldjo (ie Annie Maria) in giving him free access to her pieces of the jug and allowing him to make use of the sketch. There is no reason to believe that the lady mentioned by Minutoli is any other than Annie Maria.
- 20 William Jenner Hogg of Geneva kindly sent me a copy of the certificate dated May 1807 and signed by John Abernethy, Assistant Surgeon at St Bartholomew's, testifying to Edward Hogg's attendance at six courses of anatomical lectures. A postscript adds that 'Mr Hogg hath also attended four Courses of Dissections, six courses of Lectures on the Theory & Practice of Surgery & hath dissected under my Inspection'.
- 21 Emmenegger 2007: 259-60.
- 22 In the British Museum database of objects, the Egyptian objects are stated to have been bought in 1840 from Dr Edward Hogg. The Auldjo Jug pieces are still shown in 2018 as having been bought from the unidentified, and apparently fictitious, Dr J B Hogg (British Museum Collection Database Online: BM Registration no. 1840,1215.41).
- 23 Schulz 1839: 11, 94. His paragraph on the jug seems based on Minutoli but in a perfunctory way. He writes that the jug was discovered in 1834 in fact the year when Minotoli saw it and he translates Minutoli's *Teil* (ie 'part') by the word *pezzo* (ie 'piece'). He puts forward Prince Charles as the 'important person' but provides no evidence.

- 24 Kisa 1908, vol II: 584. One should perhaps ask why Minutoli used the verb *erstehen* rather than *erwerben* or *kaufen*. There are early 19th-century examples of *erstehen* being used to mean acquire 'in lieu of cash' or 'in return for services'.
- 25 The topic of the legal and illegal removal of antiquities and works of art from the Kingdom of Naples is extensively covered in Milanesi 2014.
- 26 Madden 1855, vol II: 79-80.
- 27 Information sent to me by Harry Nehls, Berlin, based on Minutoli letters (author's translation): 'In one of his letters he indicates precisely that he spent "10 weeks" in Naples. With the help of further letters, though only a few, I can tell you that Minutoli left Rome at the end of March, went on to Naples, and then left this city at the end of May in order to return to Rome.'
- 28 Minotoli 1835: 14.
- 29 Minutoli 1836: pl III, 47. It seems likely that a copy of the sketch was made for Annie Maria Auldjo. The present location of the sketch is unknown.
- 30 The origin of the jug as being the House of the Faun in 1831 is confirmed by Edward Trollope after direct conversation with Annie Maria Auldjo (Trollope 1854: x).
- 31 It would be impossible to construct a detailed account of Scott's activities and visitors for each day of his stay in Naples. Nevertheless, many of them have been recorded not only in his own journal and in the biography by his son-in-law J G Lockhart, but also, for instance, in Gell 1957, in Sultana 1977, in the journal of Marianne Talbot 2012, and in manuscript material, especially letters written from Naples by Anne Scott, held in the National Library of Scotland (MS 1553–54).
- 32 The excavation produced nothing more than a few bells, hinges and other objects of brass. Gell 1957: 8.
- 33 Painter & Whitehouse (1990: 140–1) indicate that it is known 'that on occasion of royal visits, tombs excavated previously were filled with objects, closed, and reopened in the presence of the guests'. In such circumstances, objects would surely not have been recorded before the royal viewing, and if donated by royal command, perhaps not after it either.
- 34 Gell 1957: 8.
- 35 Gell 1957: 4.
- 36 Russell [1925]: 35.
- 37 Talbot 2012: 148.

- 38 Talbot 2012: 151.
- 39 Gell 1957: 2.
- 40 Gell 1957: 26.
- 41 For the evolution of this work, see Sultana 1977, especially pp 122–4.
- 42 Gell 1957: 9.
- 43 In fact the ruin of a Roman Villa. See Gell 1957: 7 and note 20.
- 44 Gell 1957: 19–20.
- 45 Talbot 2012: 162.
- 46 Gell 1832.
- 47 Gell 1957: 6.
- 48 Gell 1957: 6.
- 49 This presentation copy came onto the market in 2013 and is described in the catalogue records of antiquarian book dealer Peter Harrington, 100 Fulham Road, London.
- 50 Auldjo, A M 1832.
- 51 Roberts et al 2010: 46 and Roberts 2013: 244.
- 52 See Johnson 1970, vol 2: 1226, 1238.
- 53 If Sir Walter received the jug pieces, they could have been passed on to the recipients by his daughter Anne, in the same casual, spur-of-themoment way that, on the eve of Sir Walter's departure from Naples, she gave the verse Sir Walter had written for Countess Wallendoff to Henry Baillie. (Letter of Mrs Frank Russell in *The Times*, 19 August 1932: 13.)
- 54 Gentleman's Magazine 1849: 381.

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The anti-invasion defences of the Forth and Tay estuaries, eastern Scotland: 1900 to 1919

Gordon J Barclay¹ and Ron Morris²

ABSTRACT

The anti-invasion defences of the Second World War are still a prominent part of the modern landscape (Barclay 2013). The defences built during the First World War are, however, less well known. Some of these, indeed, have been misidentified as having been built in the later war, and many places were defended in both conflicts. Even less well known are the defences planned, and in some cases built, between 1900 and 1914, as set out in the Army's 'Defence Schemes' for Scotland, and in the records of individual coast defence batteries. This paper sets out the plans to defend two adjacent parts of Scotland between 1900 and 1919, the coasts of the Tay and Forth estuaries, in the wider context of the defence of the UK.

INTRODUCTION

The problem of Home defence is part of the greater problem of Imperial Defence ... it is obvious that the United Kingdom should be adequately defended, because a successful blow struck at the heart of the Empire would be more instantly fatal than any other form of attack (WO 33/2857 1912).

It was at the beginning of the 20th century that the British Army began to plan systematically against the invasion of the east coast of Scotland, at first from a range of European enemies, but increasingly in the face of a perceived growing threat from Germany. Much of what was planned and built in the Second World War reflected earlier arrangements but there is no evidence that those in charge in the later war were aware of their predecessors' work (Barclay 2013).

The defences planned in Scotland were a development of arrangements made in southern England from the 1880s, when a French attack on London was the perceived threat (Osborne 2004: 44–5). The extension of defences to the east coast of Scotland reflected growing concerns about the vulnerability to a German attack.

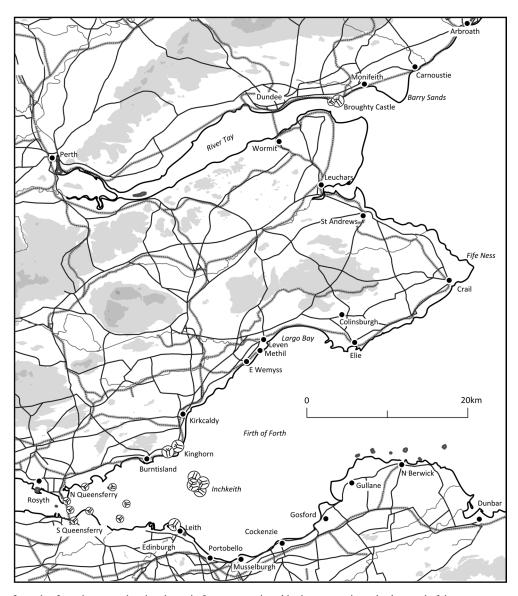
The Riddle of the Sands by Erskine Childers (Childers 1903) was one of a number of

'invasion novels' written between 1871 (*The Battle of Dorking*) and 1914 (with a resurgence in 1940), based on the premise that a continental power (usually Germany) was planning or had undertaken a surprise attack on the largely unprotected east coast of Britain.¹ These novels reflected, and indeed helped to fuel, the growing commercial and naval rivalry and tension between Britain and Germany, which went back to the 1860s (Osborne 2017: 23–33).

This paper sets out what is known of the defences planned and built on the coasts of the Forth and Tay estuaries, from Dunbar in the south-east, to Carnoustie in the north-east (Illus 1). It is based on a number of key sources: first; defence schemes for the main ports - the Clyde, the Forth, the Tay and Aberdeen - were prepared by the Army in 1900 (a revision of the missing 1899 scheme) (WO 33/173 1900), 1905 (WO 33/381 1905), 1907 (WO 33/444 1907), and 1909 (WO 33/491 1909). There were also two Scotland-wide defence documents for 1907 (The Land Defence of the UK: Scottish Zone, Part 1) and 1912 (Home Defence: Scottish Command Scheme). The defences of individual batteries were described on files relating to single sites, and in Fort Record Books (WO 192/100 1907-

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ILLUS 1 Location map, showing the main features mentioned in the text, against a background of the contemporary road and rail network (Authors)

27; WO 192/101 1910–16; WO 192/104 1918– 39; WO 192/108 1939–44; WO 192/250 1908– 53; WO 192/252 1931–55).

First World War anti-invasion defences were built at various points on the coast, particularly near the estuary ports, and these are recorded on a number of different maps, the largest collection of which is in a file in the National Archives, Kew (WO 78/4396 1916), under the title 'Scottish Field Defences'. Another file contains mainly maps of defences built around or near major coast artillery batteries, summary maps of the Fife anti-invasion defences and the defences of the banks of the Tay estuary (WO 78/4417 1915).

Very little survives of the defences. The few exceptional survivals are noted.

BACKGROUND

The defence of the coast of the 'German Sea', as the North Sea was known until 1914 (Scully 2009), was the responsibility of the navy and the army in their respective maritime and terrestrial spheres. In general, there was almost no co-ordination of their wider roles but coast defence was one of the few areas in which the War Office and the Admiralty had to work together; co-ordinated planning was achieved between 1890 and 1903 by the Joint Naval and Military Committee on Defence and, in 1903–4, by a series of joint conferences to discuss the nature and scale of defence required, mainly at naval and commercial ports (Johnson 1960; Barclay & Morris 2019). The army built and manned the coast artillery batteries while the navy managed the maritime defences - booms, patrol vessels, the Examination Service² and, later, anti-submarine and anti-torpedo nets. The oddity was submarine mining, which was an army responsibility until 1905 and then, when revived in the First World War, a naval one. To the modern eye it seems surprising that there was no permanent mechanism below Cabinet level for the co-ordination of the two armed forces until the establishment of the Committee of Imperial Defence (CID) in 1903-5. It should be remembered, however, that the Cabinet, until December 1916, governed the Empire and fought the First World War without an agenda or minutes for its meetings.

The navy and army could and did promulgate wholly unco-ordinated policies in relation to their planned activities in time of war, a situation that was only resolved in 1911, after a peculiarly embarrassing illustration of the problem in front of Dominion Prime Ministers at that year's Imperial Conference (Johnson 1960: 160).

The first modern defences on the east coast were established after the Crimean War, in the face of a potential threat to the commercial anchorages at Aberdeen and in the Tay, and to the estuary of the Forth. In summary, forts on Inchkeith and at Kinghorn were built in 1880, followed by the establishment of a line of defences just below the Forth Bridge; the defences were developed and extended reaching their greatest strength in 1916 (Barclay & Morris 2019). In Dundee, modern coast batteries were established in 1860–1 ('worse than useless' by 1887 (CAB 18/22A (1891–1903)) and subsequently rebuilt).

Government defence policy in the period from 1905 to 1910 was based on the belief that a fullscale invasion of Britain could not be undertaken by a force smaller than 70,000 men, that such a force would require 210,000 tons of shipping, which could not be gathered in secret, and that consequently Britain would have considerable notice of enemy intentions. A raid of up to 5,000 men was the most that could be expected without prior notice. (The history of these debates is most concisely laid out in Dunlop's masterly 1938 The Development of the British Army, 1899–1914.) The navy was confident for a long time that it could detect and defeat any major invasion force at sea. But there was a growing concern that the expanding fleets of the other Great Powers were effectively ending absolute British naval supremacy. The strength of the coast defences in the Forth between 1902 and 1918 is summarised in Table 1.

1900-14

As already noted, the army took the threat of invasion, and of attacks on its coast batteries, sufficiently seriously that from at least 1899 it prepared and printed complex 'Defence Schemes' for parts of the United Kingdom. We have not found a copy of the 1899 scheme and know of it only from a reference in that for 1900.

DEFENCE SCHEMES

Although the earliest known defence scheme is that for 1900, the first instructions on how these were to be structured were promulgated in June 1901 (WO 33/193 1901); the instructions had the object, first, 'to ensure that every possible preparation is made in peace time to enable the General Officer Commanding easily and expeditiously to place his command in a state of defence the moment he is called upon to do so' and second, to record all preparations made, so that an officer coming newly to the command

I he gun defences of the Firth of Forth in 1905, 1905 and in the period 1907–14		-			
	1902	1905	1907	1915	1917
OUTER					
Inchkeith	1 × 9.2-inch BL Mk I (obsolescent)	1×9.2-inch BL Mk I (obsolescent)	I	I	I
		2×9.2-inch BL Mk X	3×9.2-inch BL Mk X	3×9.2-inch BL Mk X	3×9.2-inch BL Mk X
	2×6-inch BL Mk VII	4×6-inch BL Mk VII	1	4×6-inch BL Mk VII	6×6-inch BL Mk VII
	2 × 6-inch BL Mk VI (obsolescent)	1×6-inch BL Mk VI (obsolescent)	I	1	1
	1 ×4.7-inch QF	1	1	1	1
Kinghorn (and Pettycur after 1916)	4 × 10-inch RML (obsolescent)	1×9.2 -inch BL Mk X	1 ×9.2-inch BL MkX	1 × 9.2-inch BL Mk X	1×9.2 -inch BL Mk X
		2×6-inch BL Mk VII	1		2×6-inch BL Mk VII
	2×4.7-inch QF	2×4.7 -inch QF	1	I	1
Leith Docks	I	1	1	Ι	2×6-inch BL Mk VII
INNER					
Dalmeny	2×4.7-inch QF	2×4.7 -inch QF	2×4.7 -inch QF	2×4.7-inch QF	1
Inchgarvie	2×12 -pdr QF	2×12 -pdr QF	1	4×4-inch QF	4×12-pdr (18cwt)
Carlingnose	2×6-inch BL Mk VII	2×6-inch BL Mk VII	2×6-inch BL Mk VII	2×6-inch BL Mk VII	I
Coastguard	2×12 -pdr QF	2×12 -pdr QF	I	2×12 -pdr QF	2×12-pdr QF
Downing Point				2×4.7-inch QF	2×12-pdr (18cwt)
Hound Point				2×6-inch Mk VII	2×12-pdr (18cwt)
MIDDLE (after 1914)					
Cramond Island				2×12-pdr (Naval) 18cwt QF	2×12-pdr (Naval) 18cwt QF
Inchmickery				4×12-pdr (Naval) 18cwt QF	4×4-inch QF Mk III
Inchcolm				8×12-pdr (Naval) 18cwt QF	2×6-inch Mk VII
					4×4.7 -inch QF
					4×4-inch QF Mk V
					2×12-pdr (Naval) 18cwt QF
Braefoot				2×9.2-inch BL Mk X	I

8 Ľ 4 -TABLE 1 The oun (

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would know what had been done (WO 33/193 1901). It was reckoned 'to be a great advantage to all concerned if the defence schemes in all our home districts and foreign stations are drawn up on one and the same system' (ibid). A series of section headings and outline tables was set out to assist (ibid). A first section on 'Strategic Considerations' would be followed by apportionment of troops, accommodation and supply, lines of communication and advance, in each of three periods: 'Precautionary', 'Emergency' and 'War' (ibid). This tripartite division was very soon abandoned, with 'Emergency' done away with. The scheme was to be accompanied by maps, as had been set out in a War Office letter of the previous December.

The defence schemes for the main ports were formally printed books, initially over 100 pages long, and increasingly long and detailed. They were distributed within the War Office, to local army HOs, to the relevant military commanders in the areas concerned, and their senior subordinate artillery, engineer, medical and administrative officers, as well as to the Admiralty. In total, 27 copies of the 1900 scheme were distributed. All the schemes followed the outline structure set out in 1901: the strategic background to the defence; the specific strategic and tactical considerations affecting the particular port or estuary; the actions to be taken by senior officers; and details of the process of mobilising the auxiliary (after 1909, Territorial) forces who would make up most of the defence. The documents dealt with matters at a very detailed level, down to the number of shovels and kettles to be issued, the arrangements for paying the men and, in the later examples, detailed trainby-train lists of the movements of every unit to its war station.

In 1907 the General Staff published a defence scheme for the whole of the UK. Part 1 was for the 'Scottish Zone'. In the following year the War Office published further *Instructions for the Preparation of Schemes for the Employment of Local Forces in Commands* (WO 33/468 1908) and in 1912, Scottish Command published a *Home Defence Scheme* along the lines set out above. It was the subject of detailed comments by the War Office (WO 33/2857 1912).

In 1911 the Committee of Imperial Defence published a Memorandum on the principles governing the defence of the United Kingdom (WO 33/515 1911), which superseded four documents published between 1906 and 1908 about the possible scale of attack the UK might have to face and the British response. The defence was to be largely in the hands of the Territorial Force (which had in 1909 succeeded the jumble of auxiliary, that is, the non-Regular, forces). The 1911 document adopted the Committee of Imperial Defence's 1908 conclusion that: 'so long as our naval supremacy is assured against any reasonably probable combination of Powers, invasion is impracticable'; that the size of the army in the UK was such as to compel an enemy to 'come with so substantial a force as will make it impossible for him to evade our fleets'; consequently, and as noted already, an enemy force of 70,000 men was to be assumed (WO 33/515 1911).

STRATEGIC CONSIDERATIONS AND AVAILABLE FORCES

All the scheme documents began with a section on 'Strategic Considerations'. These considerations originated in the November 1894 Report (No. XIII) of the Joint Naval and Military Committee on Defence (WO 32/6355 1890–5).

In all the documents referenced in the preceding section, no attack was considered likely north of the Clyde – Aberdeen line, as there were 'no objectives worthy [of] the attempt' to the north, and the chief commercial cities and ports (Aberdeen, Dundee, Glasgow, Greenock and Leith) were the only likely targets (WO 33/173 1900). Scotland was not seen as a likely target for a full invasion aimed at occupying the country:

It is possible, however, that a raiding expedition, consisting of two or three fast cruisers, perhaps accompanied by transports carrying from 1,000 to 1,500 men with machine guns ... by evading the vigilance of the British [naval] squadrons might appear off Aberdeen or in the estuaries of the Clyde, Forth and Tay. The object of such an expedition might be the destruction of shipping ... or the injury of docks or towns, either by bombardment or by landing armed men (WO 33/173 1900).

A 'raid' was defined in 1911 as: 'a secondary operation of war, by means of which an enemy seeks to deal a blow at our naval or military power, or to influence in his favour operations taking place in a main theatre of war elsewhere'. This might particularly include damaging or destroying the key elements of defended ports (WO 33/2857 1912).

In the 1900 document, the authors stated, in their now rather archaic prose, that an attack was 'most to be apprehended' from Russia and/or France, perhaps allied to Denmark. Only a few vessels were expected to penetrate the defences at sea (absolute British naval supremacy being assumed in Home waters at this time). The three strands of defence were to be: to man the existing coast defence guns; to place submarine mines in the channels and to concentrate land forces near the five commercial centres listed above (WO 33/173 1900).

'Submarine mining' was a defensive weapon developed in the mid-19th century and implemented in the UK from the 1870s until 1905 by a Volunteer branch of the Royal Engineers. When an attack was believed to be imminent, the local mining company would arm its mines and lay them in a prearranged site. An operator on shore, keeping the minefield under observation, could set off a group of mines if an enemy vessel was detected in the minefield. The Tay, the Forth and the Clyde were all defended by minefields (Brown 1910).

The troops available to defend the Home Country were a mixture of Regular and auxiliary forces, in Scotland, a large proportion of the latter.

The 1900 scheme document (WO 33/173 1900) had a separate 'Strategic Considerations' section for the Forth. Edinburgh was described as 'after Glasgow, the largest and most important city in Scotland' which 'might form a tempting object of attack if undefended'. The Forth at this time was not to be 'a regular naval station' in time of war (an 1894 report was quoted as the source for this) but was a centre for naval signalling and contained several ports vulnerable to hit-and-run attacks (ibid). Attacks on Edinburgh or Leith were expected to be for the purposes of 'terrorising' the population or damaging

docks, shipping or buildings, by 'incendiarism or bombardment' (ibid). Key installations were identified: the batteries at Kinghorn and Inchkeith; the submarine mining establishment and its attendant batteries at North Queensferry and the Forth Bridge (ibid). To repel land attacks, Edinburgh, the Forth and Fife were to have about 7,500 Volunteers (including 1,579 artillery, 120 cavalry, and 475 engineers) plus the regular infantry battalion garrisoning Edinburgh Castle (ibid). At this time, the only permanent coast defence gun batteries were those on Inchkeith and at Kinghorn, although work was in hand to increase the strength of the gun defence (ibid). The defence scheme included detailed provisions for defence, which are dealt with by area below (ibid).

The part of the 1900 scheme relating to the Tay also had its own 'Strategic Considerations': 'The defence of the Tay is undertaken entirely to protect commercial interests' (WO 33/173 1900). The possibility of damage by torpedoes (launched from surface ships – submarines were not at this time believed to be a threat) to docks and the Tay Bridge was also considered (ibid). The aims of an enemy attack included: to obtain money, booty or stores – a sort of state piracy; to destroy shipping, docks buildings etc and to create alarm and gain prestige (ibid).

The area to be defended in the Tay included the coast of Forfarshire (Angus) and of Fife, as far as Elie (geographically within the Forth estuary). The force to be defended against was stated as two to three cruisers and a landing party of between 1,000 and 1,500 men, against which the British forces in the area (almost all auxiliary) numbered 290 artillerymen (including the coast gunners), 280 engineers (of whom 130 were Submarine Miners), and 700 infantry (WO 33/173 1900).

By 1905 the Forth was a 'Secondary Naval Base', the estuary being defined by a line between Elie and North Berwick (WO 33/381 1905). The forms of attack to be prepared for had changed (ibid). By this date the idea of the 'Precautionary Period' had been developed by the CID as a period of growing tension prior to the formal declaration of war, during which there was a risk of 'minor raids by a few daring

men for the purpose of damaging docks, lights, bridges and batteries or vulnerable points on the coast' (ibid). In the 'War Period' more determined assaults were to be expected: attack by cruisers or torpedo boats to damage docks and shipping; or an attack on Edinburgh or the batteries of the Forth by a landing party of 2,000 men, supported by cruisers (ibid).

The three possible ports of embarkation for such a raid were named as Dunkirk (France), Wilhelmshaven and Kiel (both in Germany). Land forces of 11,704 men (mainly auxiliary) were identified as being available to protect the coasts of the Forth estuary and the coast batteries. The 1905 scheme is the first with maps showing parts of the coast vulnerable to landings by enemy forces (WO 33/381 1905).

The year 1907 saw the publication not only of a revised defence scheme for the Scottish ports (WO 33/444 1907), but also the Scottish section of the General Staff's defence plan for the UK (WO 33/542 1907). The latter included a map showing the whole of the Scottish coastline, from Inverness to Berwick-upon-Tweed, and from Greenock to Glenluce, broken down into seven sectors (the east coast comprising sectors I to V), and further subdivided into Coast Sections (nos 1 to 27 on the east coast, 28 to 32 on the west). The coastline was colour-coded to reflect its vulnerability to an enemy beach landing: 'practicable for landing', 'partly practicable' and 'impracticable' (ibid). It is striking, although hardly surprising, how closely the 'practicable' and 'partly practicable' beaches conform to those, on the east coast at least, identified as being at risk from a landing in 1940 (Barclay 2013: 85).

The map also showed the defensive positions to be taken up by troops covering the approaches to Aberdeen, Dundee, Glasgow and Edinburgh. All the Coast Sections were numbered on the map and they and their hinterland were described in corresponding portions of the text (WO 33/542 1907).

Although the construction of the Rosyth Naval Base had been announced in 1903, a final decision had not, by the time of the 1907 scheme (WO 33/444 1907), been made to proceed with it. The Forth estuary was therefore classed as a 'defended commercial port, the shipping in which was seen as unlikely to tempt an enemy to launch more than a raid by an armoured cruiser, accompanied by no more than 5,000 troops'(ibid). However, 'should a ... naval base be established at Rosyth, the conditions will be different' (ibid). The objects of this limited attack were seen to be the creation of panic, the destruction of docks and shipping and the destruction of the Forth [Rail] Bridge (ibid). The total number of British soldiers of all arms available (mainly auxiliaries) was about 6,500 (ibid).

The 1909 document was a subset of a larger defence scheme, titled 'Scottish Defended Ports'. The document is split into four parts: the Forth (Part I), the Clyde (Part II), the Tay (Part III) and Aberdeen (Part IV). We consider here only Parts I and III (WO 33/491 1909).

'Strategic Considerations' The section identified the Firth of Forth as a 'defended commercial port' and a 'port of refuge'.³ The boundary of the 'defended port' lay at the maximum range of the guns, a line between East Wemyss and Cockenzie. Because, even before the naval base was completed, the Forth would probably be used as a naval anchorage, antitorpedo craft defences would be provided for the anchorage west of (upriver from) the Forth Bridge. Defences on a larger scale were to be provided as the naval base proceeded. As before, preparation was to be made against an attack by armoured cruisers and up to 5,000 men (WO 33/491 1909).

For the Tay, the 'Strategic Considerations' identified the estuary as a defended commercial port and the aims of any attack were likely to be the creation of panic, the destruction of shipping, docks etc, the destruction of the defence works (the fixed defences) and the destruction of the Tay [Rail] Bridge (WO 33/491 1909).

In the Precautionary Period attacks might be expected on the fixed defences, the docks or the Port War Signal Station (PWSS) at Carnoustie,⁴ and three detachments of Regular infantry were to be provided for Castle Green Battery, Dundee Docks and both ends of the Tay Bridge. Raids were expected to be by no more than a few hundred men (WO 33/491 1909).

The document reflected the continued strength of the 'Blue Water' school of defence, as it was

stated categorically that the transports and naval escort for a raiding force 'would have to evade our Fleet in home waters', the clear implication being that only a very small force – sufficient to carry up to a few thousand men – could evade detection (WO 33/491 1909).

SUMMARY OF THE SCHEMES

The 1900 Scheme (WO 33/173 1900)

No defence was contemplated for Scotland north of Aberdeen or the Clyde because of the 'sparse population and absence of large towns, the difficulty of the country, and its distance from the heart of Great Britain' there being 'no objective worthy [of] the attempt' (WO 33/173 1900).

The Forth 1900

Inchkeith, as the main strength of the defences, was at risk from a boat landing which 'might be attempted anywhere round the island ... An attack would have for its object the capture of the island, and disablement of the batteries, in order to open the channel to the enemy's ships' (ibid). Local defences were built in the form of firing trenches overlooking the bays at the north-west and north-east end of the island. The approach from the main working harbour of the island ('Leith Harbour') to the West Battery was guarded by a detachment of infantry and further men would line the road between the harbour and the South Fort overlooking the bay. An attack on Kinghorn was considered unlikely so long as Inchkeith was held, and an assault on the Forth Bridge was 'not probable'. It was considered possible (ibid) that 'the enemy might land at several points between Gosford Bay and Portobello' on the southern shore: Gosford Bay, Seton Sands, Cockenzie, East Musselburgh Sands, Fisherrow Sands and Portobello Sands, all of which were effectively out of range of Inchkeith's guns. Leith, Granton and Burntisland were all considered to be at risk of motor torpedo boat attack. The naval signal stations at St Abb's Head, Dunbar and Berwick were potentially at risk of small raids and each was to be defended by an NCO and 15 infantrymen. The defence of the estuary was largely the responsibility of auxiliary forces with a cadre of Regulars of all arms: in Edinburgh the field forces would comprise 150 Yeomanry (that is, auxiliary cavalry), 724 Volunteer Artillery (with eight 16pdr guns), 130 Volunteer Engineers and 1,500 Volunteer infantry. At the various coast defence batteries there were to be 1,379 artillerymen, 345 Engineers (including 130 Submarine Miners) and 850 infantrymen, of whom 200 were to garrison Inchkeith (WO 33/173 1900).

The Tay 1900

The garrison of the Tay Defences in wartime was also to be made up largely of Volunteers. At any one time it was intended to employ 290 artillerymen (of whom 10 were Regulars), 150 Royal Engineers (20 Regulars), 130 Submarine Miners and 700 infantry from the 1st and 2nd Volunteer Battalions of the Royal Highlanders (the Black Watch), 300 of whom were to be based in Dundee. Because of the importance of the coast guns and controlled minefield at Broughty Castle, and the great risk of these being neutralised by a coup de main, the bulk of the defence was concentrated there. Positions were also to be occupied near Monifeith by two detachments, one covering the Arbroath-Dundee road, the other at the coast. The force around Broughty Ferry was considered sufficient to repel any attack anywhere on the northern shore. There was also thought to be a risk of an attack on the southern shore by a force that would then attack northwards across the Tay Bridge, possibly using rolling stock captured at the south end. A force of 50 men was to be placed at the southern end of the bridge and otherwise the defence force was to await events, should there be a landing on the south shore. It was expected that there would be adequate steamship capacity to transport any necessary force from the north to the south shore (the lowest road crossing at that time, of course, being in Perth). If an attack was considered imminent, the Commanding Officer of the Submarine Miners was to prepare to lay the controlled minefield if ordered to do so. The defence scheme contained very detailed orders as to how the field was to be prepared and laid. Arrangements for treating up to 160 casualties were to be made at the Dundee Royal Infirmary

and the Station Hospital, Perth (WO 33/173 1900).

The 1905 Defence Scheme (WO 33/381 1905)

The defence scheme of November 1905 (explicitly 'revised' rather than newly prepared) survives as four separate documents, Part I being that for the Forth, with separate documents for the Clyde, the Tay and Aberdeen. All four parts had a preliminary set of 'Strategic Considerations' (WO 33/381 1905). Although Scottish Command was created out of the old Scottish District in the same year, the scheme was nevertheless prepared by the War Office in London.

The Forth 1905

In 1905 the Forth was classified as a Secondary Naval Base, at risk in the Precautionary Period from raids 'by a few daring men', and in the War Period to attack by cruisers and torpedo boats, or by a raid of up to 2,000 men. The Fortress Commander would have available to him (in addition to the by now very strong coast defence batteries) a force comprising 476 Imperial Yeomanry, 1,286 artillerymen (mainly on the coast batteries), 353 engineers and 9,589 infantrymen, almost all from the auxiliary forces. Throughout this period there was always a battalion of Regular infantry at Edinburgh Castle, but they would have a role only in guarding the batteries at Kinghorn, Inchkeith and Carlingnose in the Precautionary Period, a role taken over, in far greater force, by Volunteers in the War Period (WO 33/381 1905).

Inchkeith was to have a garrison of 200 infantrymen, Kinghorn battery 240, and Carlingnose and North Queensferry batteries 159 each. On the southern shore, Dalmeny, overlooked by high ground to the south, was to have a garrison of 159, and there were plans to raze cottages and Dalmeny railway station to improve the defenders' field of fire (WO 33/381 1905).

Edinburgh was to house a general reserve comprising 4,000 infantry, a force of Imperial Yeomanry, with artillery pieces. The commander of this mobile reserve (whose HQ was at Piershill barracks in the eastern part of the city) was required to familiarise himself with his likely area of operations, that being a band 10 miles wide inland from the coast between Elie and North Berwick, and to establish sources of intelligence. The Forth Bridge was to be guarded by a force of one officer and 30 other ranks at both ends (WO 33/381 1905).

Although maps had been a prescribed element of the localised Schemes since 1901, the 1905 scheme was the first to include maps showing beaches 'practicable' or 'partly practicable' (a category abandoned in future schemes) for an enemy landing inside the estuary, as far as Dunbar on the Lothian side (WO 33/381 1905).

The Tay 1905

The Tay was classified as a defended commercial port, at risk from the generic threats faced by purely mercantile ports, by raids by one cruiser with accompanying transport, landing 2,000 men, with a few machine guns (WO 33/381 1905).

The area of the defended fortress extended from Carnoustie to the north-east to Leuchars to the south-west. In this area the beaches practicable for enemy landings were mapped for the first time (the category of 'partly practicable' beach appeared in the key but no beaches were so labelled) (ibid).

Provisions were to be made during the Precautionary Period against 'minor raids, by a few daring men, for the purpose of damaging the batteries or Tay Bridge' (ibid). During the War Period, provision was to be made against direct advance up the river, which would require the silencing of the Broughty Castle guns, attacks on docks by torpedo craft running past Broughty Castle, a landing on the coast of Forfarshire to attack Dundee from land and a landing on the coast of Fife, to be resisted by a detachment at Leuchars (ibid).

At this time there were four naval War Signal Stations to be guarded, at Usan and Carnoustie north of the river, and at Crail and Elie on the south coast of Fife (although both fell within the boundary of the Tay defences at the time) (ibid).

To guard these places and to resist a landing the Fortress Commander had at his disposal 476 Yeomanry cavalry, 414 Artillery, 137 Engineers and 2,455 infantry. All but a handful of these men were Volunteers. The men were distributed between Broughty Castle, Castle Green and Wormit Hill, with large detachments at Leuchars (about 1,000 men), Monifeith (almost 700 men, mainly infantry) and between seven and ten other ranks at the War Signal Stations (ibid).

The 1907 Defence Scheme (WO 33/444 1907)

As noted above, two documents relevant to our study were published in 1907. First, there was a War Office document titled *The Land defence* of the United Kingdom: Scottish Zone, Part 1, part of a series of schemes published in that and subsequent years covering the whole of the UK (WO 33/542 1907). Second, in September 1907 there was a revision of the defence schemes for the four Scottish ports, of which we consider here those for the Forth and the Tay. The Scotland Coast defence scheme was, for the first time, prepared locally by Scottish Command (WO 33/444 1907).

The Forth 1907

The 1907 scheme (WO 33/444 1907) was more detailed than its predecessors. The Forth had, oddly, reverted to being a defended commercial port rather than a Secondary Naval Base. During the Precautionary Period attacks were to be prepared against at Kinghorn Battery; Coastguard Battery, Carlingnose Battery and the north end of the Forth Bridge; Dalmeny Battery and its searchlight emplacements, and the south end of the Forth Bridge; and the island of Inchkeith.

Four 'projects' were set up to erect close defences at each of these four vulnerable points and the stores necessary to carry them through were to be stored locally. The docks at Leith, Granton and Burntisland were to be defended by the local police force (WO 33/444 1907).

In the War Period, the type of attack to be prepared for was very much as set out in 1905 and it was not envisaged that the shipping gathered in the river would tempt a foreign power to risk more than a raid by an armoured cruiser (WO 33/444 1907).

The forces available to the Fortress Commander were 321 Imperial Yeomanry, 232 artillerymen in the fixed defences (which had been radically reduced by the Owen Committee in 1905–6), 232 artillerymen in two field artillery batteries, each of four 15-pdr guns, and 5,523 infantry, mainly auxiliaries. The garrison of Inchkeith was only to be 134 officers and men, reduced from the previous plan to have 200 men (WO 33/444 1907).

The scheme again included maps showing beaches practicable for enemy landings. Beaches marked only as 'partly practicable' in 1905 were combined into the sole 'practicable' category from 1907 onwards. One or two further 'practicable' beaches were also added (WO 33/444 1907).

Comments made on the scheme by the War Office in 1908 (ibid) noted that the section on the Forth would require amendment throughout 'on account of recent changes in the strategic condition of the Forth', consequent upon the decision taken to proceed with the construction of the Rosyth naval base. The estuary would probably be used as a fleet anchorage in war, even before the base was completed. A rebalancing of the distribution of the garrison, from the south to the north coast of the estuary, to take account of the growing importance of the naval base might be necessary and further aims of attack might be added to those listed above: attack upon the fleet at anchor or damage to works in progress at the naval base (WO 33/444 1907).

Other suggestions included the increase of the Inchkeith infantry garrison.

The Tay 1907

In 1907 the Tay was still described as a defended commercial port, liable in wartime to raids of up to 5,000 men, with light, portable artillery pieces (WO 33/444 1907).

In the Precautionary Period, minor raids or sabotage by agents might be possible. The Regular infantry battalion at Fort George would provide guards for vulnerable points, but in the War Period, a large force of Volunteers would be made available to the Fortress Commander: 80 Royal Engineers, 321 Yeomanry cavalry and 1,627 infantry of the Royal Scots (the Black Watch). The Commander also had 42 artillerymen in the coast defences and 104 men of a Volunteer artillery battery of four 15-pdr guns (WO 33/444 1907). These troops were distributed in detachments at Colinsburgh, Fife (Yeomanry), Leuchars (Yeomanry), Arbroath (Yeomanry), Monifeith (three companies of infantry) and at Wormit (six companies of infantry). A large reserve of all arms – 1,147 men – was maintained in Dundee and ten-man guards were provided for the PWSS at Carnoustie, and War Signal Stations at Usan, Fife Ness and Elie. The 1907 map of beaches practicable for enemy landings was unchanged from 1905 (WO 33/444 1907).

As in the Forth, the scheme set out 'projects', laying out all the obstacles, entrenchments, loopholes and other positions that were to be prepared. The first was for the close defence of the coast artillery battery at Castle Green, Broughty Ferry. The second was for the defence of Wormit and the southern end of the Tay Bridge. Tools and materials for both projects were to be stored at Broughty Castle, ready for issue. Although a company of infantry was allotted to defend the north end of the Tay Bridge, no substantial entrenchment was considered necessary. The Intelligence Officer of the Fortress was to encourage increased watchfulness for strangers, and to 'amplify' his list of local guides and informants - described as being mainly shepherds and gamekeepers (WO 33/444 1907).

A defensive position was to be established on a line Monifeith – Ardownie – Laws, to protect the coast battery and Dundee from attack by forces landed to the north-east (WO 33/444 1907).

The 1909 Defence Scheme (WO 33/491 1909)

The 1909 *Defence Scheme: Scottish Ports* was once again a Scottish Command product, appended to which were War Office comments, provided in April 1910. This was the first defence scheme written after the creation of the Territorial Force that year, which would carry most of the burden of Home Defence (WO 33/491 1909).

The Forth 1909

The 1909 scheme took account of the comments made by the War Office on the 1907 revision. Thus, while the Forth was still considered a defended commercial port, it was also a 'port of refuge' for shipping, and would 'probably be used as an anchorage for the Fleet in time of war, even before the naval base at Rosyth is completed ...' (ibid). The estuary was now at risk of a wider range of attacks in both the Precautionary Period and the War Period to create panic, destroy docks and shipping, destroy the Forth Bridge, destroy the works of defence, attack warships at anchor and destroy or damage works at the naval base (ibid).

These types of attack were to be considered possible during both the Precautionary and War Periods; during the latter, raids by up to 5,000 men were also to be prepared for (ibid).

Infantry detachments were allocated in the War Period to protect all the coast batteries. Inchkeith had the largest garrison, with 660 infantrymen (over four times larger than in 1907), while Inchgarvie had 41. A general reserve of four battalions of infantry was held in Edinburgh with 12 15-pdr field guns in two batteries (ibid).

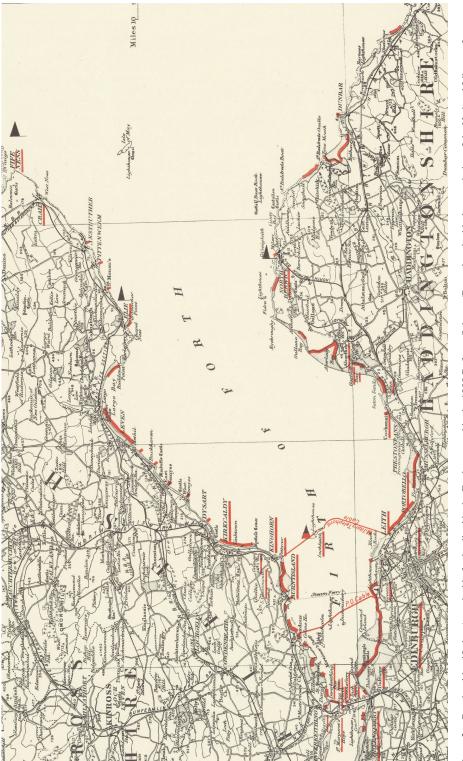
The commander at Kinghorn and Burntisland was instructed to prepare a line of defensive positions north of Kinghorn, while the commander on Inchkeith was instructed to prepare shelter and positions for his large infantry garrison (ibid).

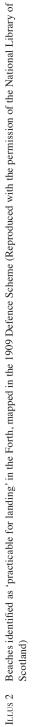
The beaches mapped as practicable for enemy landings were the same as in the 1907 scheme (Illus 2) (ibid).

The Tay 1909

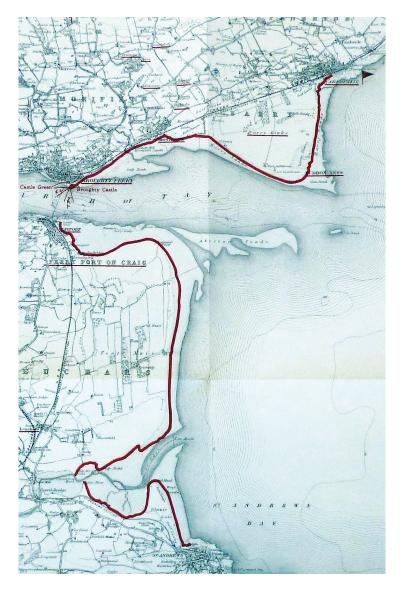
As before, the Tay was classified as a defended commercial port, the extent of the port being defined by the maximum range of its guns, which was from Eden Mouth, near St Andrews, round the estuary to the PWSS at Carnoustie (WO 33/491 1909).

In the 1909 scheme, in the Precautionary Period, preparations were to be made to counter only the activities of 'aliens already in the country, or other ill-disposed persons, to damage the works of the defences, the Tay Bridge, the Dundee Docks and the shipping of the Tay or the Port War Signal Station'. To meet such attacks, three detachments of Regular infantry, each of two officers and 90 other ranks, were to be placed at Castle Green Battery, at Dundee Docks and the north end of the Tay Bridge (ibid).





In the War Period, a raiding force of no more than a few hundred men was expected, or an attack by a single cruiser to damage shipping, and it was intended that the duties of defence would devolve onto Territorial units, including two battalions of Territorial infantry (40 officers, 1,312 other ranks (o/r; that is, other than officers)), a Territorial Fortress Company, Royal Engineers (to manage the searchlights at the coast batteries) (two officers, 76 o/r) and men of the North Scottish Royal Garrison Artillery (four officers, 104 o/r). The Fortress Commander had six other officers and 29 o/r in his HQ at the Royal Hotel in Dundee. Four companies of infantry (340 officers and men) would garrison the key position on the southern shore, on Wormit Hill, while another four companies were to be stationed at Monifieth on the north shore.



ILLUS 3 Beaches 'practicable for landing' in the Tay estuary, as mapped in the 1909 Defence Scheme (TNA WO 33/491 1909)

Single infantry companies guarded the docks and the northern end of the Tay Bridge, the battery at Broughty Castle and the southern end of the bridge. The reserve force in Dundee would comprise eight companies of infantry, four each from the two Territorial battalions (682 officers and men) and a battery of four 15-pdr field guns (WO 33/491 1909).

The beaches mapped as practicable for enemy landings in 1909 were the same as in earlier versions of the scheme (Illus 3) (ibid).

THE SCOTTISH COMMAND HOME DEFENCE SCHEME 1912 (WO 33/2857 1912)

The 1912 document was prepared by Scottish Command in Edinburgh and covered the whole of Scotland. The scheme concentrated on the mainland from Inverness southwards, where the main targets were, but also set out the location of local defence forces such as the Shetland Companies of infantry, and of Vulnerable Points to be guarded across the whole country (for example, the transatlantic cable landing points on Orkney). The 1909 defence schemes of the individual defended ports (the Forth, the Clyde, the Tay and Aberdeen) were explicitly referenced in, and subordinated to, this Command-wide scheme (WO 33/2857 1912).

Large-scale invasion of Scotland was not envisaged, and the precautions set out in the document were to deal with a large raid of between 5,000 and 10,000 men, equipped with light artillery. The two most important targets for an enemy were considered to be the Rosyth naval base and the Forth generally, and the Clyde and its ship-building industry. Targets of lesser importance were identified as the Tay/Dundee, Aberdeen, the Nobel Cordite Factory at Ardeer (in a vulnerable position, right on the coast), and the railway junctions, stores, magazines and fuel reserves in West Lothian, around Pumpherston and Uphall. Thirty-seven copies of the document were circulated, 17 within Scotland and six to the Admiralty. A map of the mainland was included to show beaches practicable for enemy landing, necessarily more generalised than the detailed maps attached to the individual port defence schemes (ibid).

It was feared that landings might be attempted against the two main targets, on the Forth by landings on either shore, but more likely on the north, and on the Clyde, on the Ayrshire coast. Apart from the garrisons of the port fortresses, local defence forces and coast-watching arrangements (by men from the Cyclist Battalions), the army in Scotland was split into two groups. One force, comprising the Highland Mounted Brigade and most of the Highland [Infantry] Division, was to be held in reserve and could, if necessary, form part of the Central Force, the mainland British reserve, which would operate against any major landing. The other was the 'Local Force', which was to be based around central Scotland in places that would allow it to concentrate and move against landings either in the east or the west. The 'Local Force' comprised the Lowland Mounted Brigade, most of the Lowland Division and two Cyclist Battalions. Significant elements of this force were stationed near Stirling, Larbert and Dunfermline, from where the complex pre-Beeching rail network could move men and equipment rapidly to where they were needed. Other elements of the Local Force were based at Lundin Links, Haddington and the Berwickshire coast on the Forth, at Carnoustie on the Tay and at Kilmarnock. The Forth was provided with a reserve of Territorial troops, comprising the Lothian Infantry Brigade, Royal Engineers and Royal Artillery (ibid).

Appendix A of the scheme listed, and described in some detail, the potential landing places in the vulnerable parts of Scotland, broken down by area: Firth of Forth, Southern Shore (as far west as Seton Sands); Firth of Forth, Northern Shore (Largo Bay and Methil Docks); East Coast of Fife (that is, St Andrews); Firth of Clyde; coast of Forfarshire and Aberdeen. Interestingly, the landing beaches at the mouth of the Tay (Barry Sands and Tentsmuir), described and mapped in the Tay defence scheme, were not included in the list, nor were the beaches in the inner part of the Forth (ibid).

We are not aware that any of the anti-invasion defences set out in the 1905–9 plans (other than around coast batteries) were ever built prior to the beginning of the First World War. However,

what was put in place during the war reflected closely these earlier arrangements.

Pillboxes/Blockhouses

In the earlier part of the period under discussion, what were later called 'pillboxes' by British soldiers on the western front in the First World War, were usually referred to as 'blockhouses' (War Office 1911). It is clear from the contemporary documents that this term covered not only concrete-walled structures but also 'blockhouses' of the kind built by the British Army in the Boer War, buildings made of wood and corrugated iron, made bullet-proof by surrounding stone walls or timber 'boxes' filled with soil or gravel. Designs for such structures were included in the Manual of Field Engineering (War Office 1911). Some of the timber blockhouses in the Forth, of which many plans and cross-sections were recorded (see below), were clearly designed to accommodate a resident garrison as they were provided with stoves and bunks. In the descriptions below, 'blockhouse' has been used where that was the term used, and information is provided about construction materials, where these are known.

Brick and concrete blockhouses were incorporated into the original plans for the close defence of Braefoot battery in 1912 (although the battery was not completed until 1915) (WO 78/5169 1912).

Nine pillboxes were also built on Inchkeith, at some point between the 1911 War Office Special Survey of the island and 1915 (WO 78/4417 1915). A further five had been built by 1918, and were recorded on the War Office map of that year (War Office 1911–18).

An eight-sided pillbox, with the date 1919 visible over its door, was built at North Berwick (NT58SW 131: NT 53050 85410). Nothing is yet known about its construction.

DEFENCES PLANNED OR BUILT, 1914–18

Early in the First World War, anti-invasion defences were built and the batteries listed in the previous section had their fixed, landward defences put in place or extended.

Our review of the defences of the two estuaries has identified features at the following places in the Tay and the Forth:

Angus

· on the northern approaches to Dundee

Fife shore

- on the southern approaches to the Tay Bridge and near Wormit
- St Andrews
- Fife Ness (Naval Radio Station)
- · Largo Bay
- Methil–Balgonie line
- around and inland from Kinghorn
- · Inchkeith
- Downing Point battery
- · Braefoot battery
- the Crombie Royal Naval Armaments Depot
- the northern approaches to the Forth Bridge, incorporating the defences of Carlingnose and Coastguard batteries, Rosyth Dockyard, and Castlandhill Naval Radio Station

Lothian shore

- the southern approaches to the Forth Bridge, incorporating the defences of the Dalmeny and Hound Point batteries
- Blackness Castle
- the beaches west of Dunbar
- · beaches to the north and north-west of Gullane
- the coast at Prestonpans
- the approach to Musselburgh harbour
- covering the eastern side of the city of Edinburgh, from Seafield on the coast, to Meadowhead Farm, beyond the contemporary edge of the city

They are described in this order below.

THE TAY

Until 1966 the lowest road crossing of the Tay was at Perth. The current rail bridge (opened 1887, replacing that in use between June 1878 and its fall on 28 December 1879) was, however, considered both an important asset in the transport network and a potential route for enemy infantry, cavalry and artillery to cross the estuary. Consequently, it was defended in the period under consideration (as it was again in the Second World War).

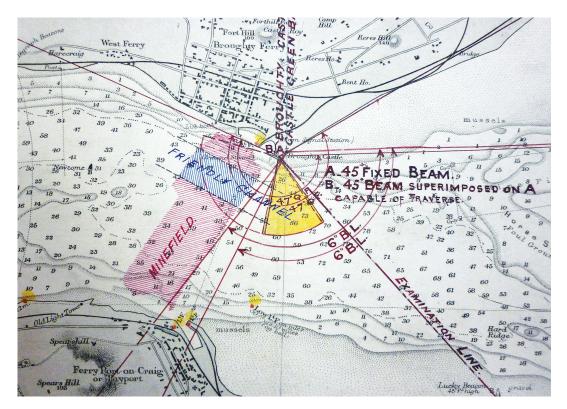
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Gun defences were planned near the mouth of the estuary during the Crimean War, in 1854, when Broughty Castle was bought by the government. Work on adapting it for modern guns was undertaken in 1860–1. A unit of submarine miners was established in the Tay in 1888, accommodated in a complex of buildings to the east of the Castle. In time of war the controlled minefield was to be laid across the estuary opposite the castle (Illus 4). To cover the minefield, emplacements were built between 1888 and 1891 for two 4.7-inch Quick Firing (QF) guns; the guns were put in place in 1893 and 1899 (Mudie et al 2010).

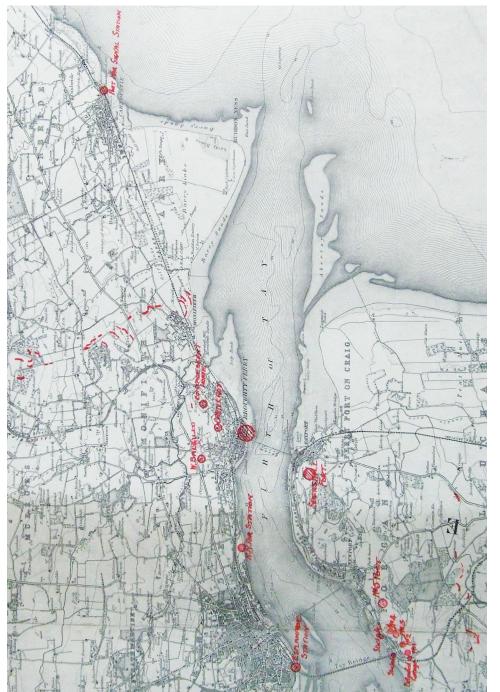
By 1898 it had been determined by the Joint Naval and Military Committee on Defence that the defences of the Tay should be strengthened by the addition of a battery of two 6-inch Breech Loading (BL) guns (CAB 18/22A 1891–1903).

Wormit Hill and Tayport

There is only one map of the defences of the area of the mouth of the Tay (WO 78/4417 1915); although its precise date of compilation is unknown, it is marked as having been removed from its original file in May 1916 (Illus 5). North of the river, three groups of firing trenches blocked the line of approach along the coastal plain. A fourth group covered the beach at Monifeith. Six presumably defended locations were marked by hatched circles, their status uncertain: 'Convalescent Home'; 'Castleross'; 'W Balgillo'; 'RN Air Station'; 'Esplanade Station' and the largest, at Broughty Castle coast battery.



ILLUS 4 Chart of the defences of the Tay, around 1905, before submarine mining was abandoned. The chart shows the arcs of fire of the two 6-inch Breech Loading guns of the Castle Green Battery; the arcs of fire of the two 4.7-inch QF guns emplaced on the Castle itself; the arcs of illumination of the two moveable fighting lights (yellow area); areas of two different types of controlled mines (red and blue hatching) (TNA WO 78/5193 1913)



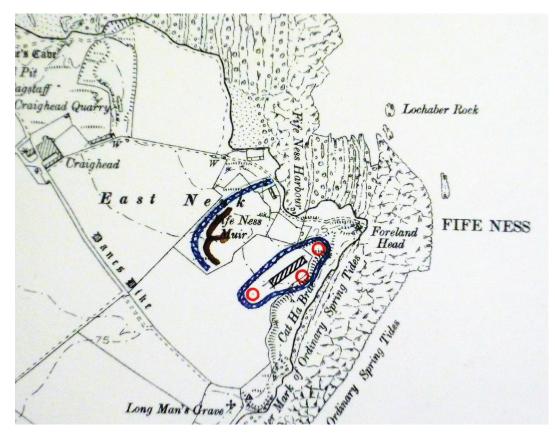




ILLUS 6 Photograph by Major F R Burnet, of the Spiershill Fort, showing the blockhouse and one of the two 4.5-inch guns on field mountings. The 4.5-inch gun was the same as used, on a different mounting, in coast batteries (Inverclyde Museums)

On the south shore of the estuary, on the summit of Spears Hill, above Tayport, across the river from the Broughty Ferry battery, was 'Spiershill Fort'. A series of photographs in the collection of Inverclyde Museum, taken by Major Frank Russell Burnet, includes a group of about a dozen photographs showing officers and men on a training course at 'Fort Spiers' (Illus 6). The main element of the fort seems to have been a blockhouse, made of what may be concrete slabs, and with numerous closely spaced loopholes (typical of the period) and a pitched roof. Beside it were two 4.7-inch guns on field carriages of a kind issued to Volunteer/Territorial artillery units after the Boer War (Hogg 1998: 31). Interestingly, before the First World War map came to light in 2013, cropmarks on the site of the fort had been scheduled as a prehistoric settlement (Canmore site no. NO42NE 40).

A line of about ten firing trenches covered the southern and south-eastern approaches to the Tay Bridge, at a distance of about 2.2km to 5.2km, between NO 3972 2405 and NO 4464 2436. Closer in to the bridge, there were eight further



ILLUS 7 The defences at the important Naval Radio Station at Fife Ness (TNA WO 78/4396 1916)

posts. Five were laid out in a line about 1km long between NO 3941 2581 ('Defended Cottage') to NO 4027 2636 ('No. 4 Post'); a further position ('No. 5 Post') was located about 870m to the ENE, at NO 4113 2657, on St Fort Hill.

St Andrews

The defences of St Andrews were limited to a single firing trench 130m long, running south-west/north-east, dug at the northern edge of the links overlooking the beach, just east of the mouth of the Swilken Burn and just over 100m north-west of the Royal & Ancient Golf Club (NO 5026 1715 to NO 5039 1716). It was broken into two unequal parts by a track through to the beach. Just over 100m to the south and about the same distance WSW of the golf club, was a machine-gun emplacement in the shape of a pair of inverted 'U's, covering the rear of the firing trench (at NO 5037 1703).

THE FORTH

Fife Ness

The Naval Radio Station at Fife Ness (NO 6368 0967) was enclosed within a barbed wire enclosure about 190m long (north-east to south-west) by a maximum of about 70m across. Three firing positions were marked, to the north-east, south-west and east. The approach to the site from the north-west was covered by a curved screen of barbed wire about 250m long, fronting a W-shaped firing trench (Illus 7).

Largo Bay

Largo Bay had been identified as a beach vulnerable to a hostile landing as early as the defence scheme of 1905. The beach to the east of the village of Largo, about mid-way along Largo Bay, is fronted by a rocky shelf and was perhaps seen as less practicable for landing. The sandier beach to the west, between Largo and Leven, was covered by a line of six discrete firing trenches on the seaward side of Scoonie Links; three between 240m and 270m long were laid out between NO 4057 0232 and NO 3977 0191. Another three, between 100m and 170m long, occupied the ground between NO 3956 0175 and NO 3914 0139. At NO 3988 0196, a further 100m-long trench had been dug in advance of one of the eastern group of trenches. There were two machine-gun positions in advance of the firing trenches, at NO 4032 0221 and NO 3929 0151 (marked as for two machine guns). The firing trenches are each shown as having one or more zig-zag approach trenches from the rear.

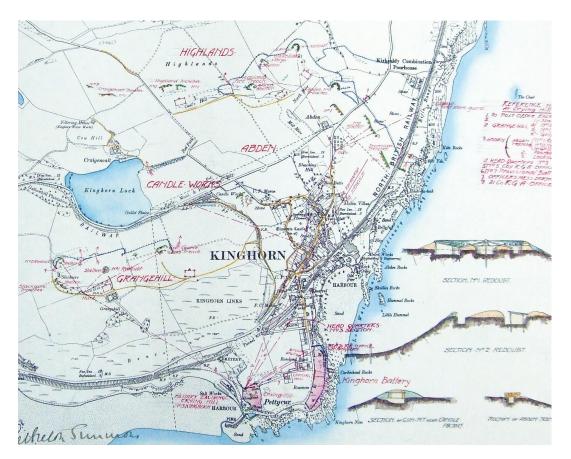
Methil-Balgonie line

Some 6km to the west, an east-facing defence line was drawn from just east of East Wemyss on the coast (NT 3431 9699), to a point on the River Leven, 4km to the NNW (NO 3262 0043). It comprised a discontinuous line of firing positions (about 1,700m long in total) fronted, for about 450m of its length, by barbed wire entanglements. The wall around Balfour Mains farm was loopholed. One of the three War Department maps recording the defences seems to be missing from the file (the two on file are labelled 'Markinch 1' and 'Markinch 3'); it is likely that further firing positions were marked on this missing sheet, in the area around (NT 332 983), where the main road crossed the defence line.

Kinghorn and its hinterland

The heaviest defences in Fife were built around and inland from Kinghorn. They were designed not only to protect the key coast defence battery there but also to provide a major obstacle to an enemy force moving west towards the Forth Bridge and Rosyth.

The coastal approach from Kirkcaldy was blocked by a series of barbed wire entanglements in front of firing trenches and more substantial 'redoubts' (temporary enclosed defensive positions) in the 'Highlands'/'Abden' defence area (Illus 8). The approach to the town from the north was blocked by defences at 'Candle Works'. Finally, the direct north-west approach to the battery across open country was defended by entanglements, firing trenches, machine-gun positions and a blockhouse on high ground at 'Grangehill'. The 'Abden' and 'Grangehill' defences included accommodation huts for the defending infantrymen and their officers (Illus 9).



ILLUS 8 Summary map of the defensive positions around Kinghorn, designed to protect the important coast artillery battery at Kinghorn, and to prevent an enemy force advancing along the coast towards Rosyth (TNA WO 78/4396 1916).

A map of the Kinghorn and Pettycur batteries drawn in 1922 showed the location of three blockhouses, one of which (see below) had been built in 1914. One of these survived in good condition until 2016; by August of that year it had been unroofed and partly demolished, leaving two walls to be incorporated into a new building (Illus 10).

In the General Mobilisation Scheme the 7th (Territorial Force) Battalion of the Black Watch was detailed for coast defence and was allocated to the war stations of Kinghorn and Burntisland (Wauchope 1925: 239–40). 'Preparatory Movement' was ordered on the evening of 31 July 1914 and a 'Special Service Section' of three officers and 117 other ranks drawn from C Company (Kirkcaldy) and B Company (Lochgelly) was to be ready to occupy Kinghorn Fort. The Section arrived in Kinghorn on 2 August. Fortunately, they had conducted a test mobilisation earlier in the year. The main body of the battalion arrived at its War Stations during the evening of 7 August (Wauchope 1925).

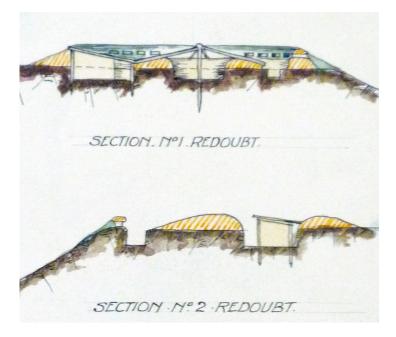
The General Officer Commanding Scottish Coast Defences visited Kinghorn soon after the battalion's arrival and told the defending troops that an attack in force by the Germans might take place at any moment. It was assumed, he said, that any attack on the Forth could be dealt with by the Fleet and shore batteries, but it was thought possible that a landing might be effected somewhere on the east coast of Fife, with the object of taking Kinghorn Fort, the defences at Rosyth and the Forth Bridge from behind (Wauchope 1925).

It was to foil such an attack that landward defences were built around the battery, in a semi-circle extending from the shore close to the poorhouse on the east, taking in the high ground to the north of the town, and ending on the Burntisland road west of the burgh boundary. A second, outer, line was prepared on the heights above the harbour of Pettycur and a blockhouse was established on the Crying Hill, behind the Kinghorn battery. Several large houses in rear of the Fort were commandeered and put into a state of defence, to form a 'keep' in case the first and second lines were carried.

The construction of these works entailed much hard work, but they were completed in an intensive period of 36 hours of almost digging. continuous As 60% of the men of the 7th Battalion were connected with the mining industry, this achievement becomes comprehensible (Wauchope 1925).

For the first three months after mobilisation the line was occupied in force under conditions

closely approximating to those of active service. The part of the line between the coast and the Kirkcaldy road was low-lying and easily flooded in wet or snowy weather, giving a foretaste of the mud which the battalion first encountered on the Western Front in the spring of 1915. By degrees, the trenches were improved and various devices introduced to render them habitable and



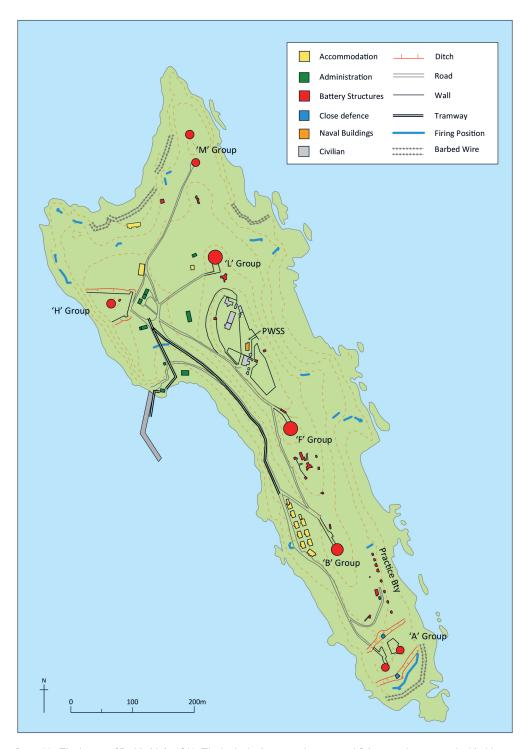
ILLUS 9 Cross-sections of two of the 'redoubts' in the Kinghorn defences (TNA WO 78/4396 1916)



ILLUS 10 The surviving blockhouse at Kinghorn/Pettycur, partially demolished and being incorporated into a modern building, 2016 (Authors)

the battalion settled down to the ordinary routine of trench duties, the different companies being relieved at suitable intervals (Wauchope 1925).

The garrison was reduced gradually to detached sentry posts by the end of December 1914, but the supposed danger of invasion was not entirely removed, nor were the trenches completely evacuated until early 1915 (ibid).



ILLUS 11 The layout of Inchkeith in 1911. The barbed wire entanglements and firing trenches are marked in blue (Authors)



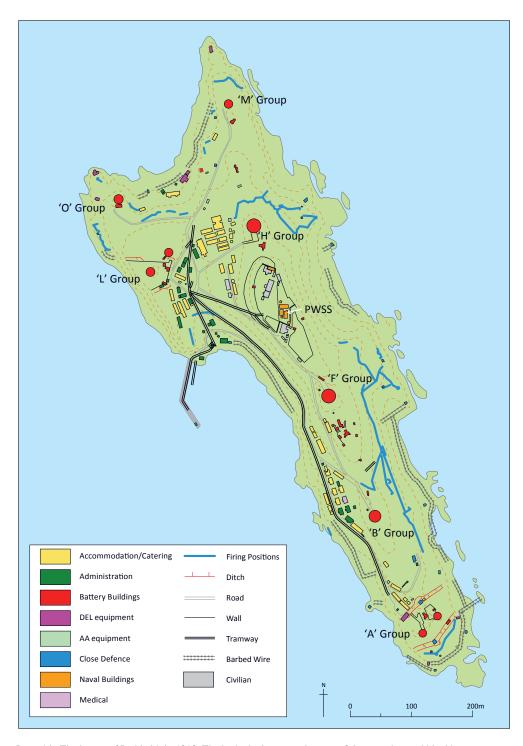
ILLUS 12 Concrete-walled firing position on Inchkeith, built before 1911. A First World War blockhouse (No. 8 using the 1918 numbering) is visible behind (Authors)



ILLUS 13 The concrete-lined, timber-roofed firing trench built across the south front of the South Fort on Inchkeith by the time of the 1911 map (Authors)

Inchkeith

Inchkeith was the only one of the fortified islands in the river large enough to have close defences built on any scale. The defences were recorded on the detailed Ordnance Survey 1:500 maps of the island, published for the War Office in 1911, and again in the edition of 1918. In 1911, the defences comprised a triple or quadruple 'wire entanglement' across the northfacing beach at 'Kinghorn Harbour', another cutting off the access from the bay known as 'Kirkcaldy Harbour' and a third across the southern frontage of the South Fort (Illus 11). About a dozen firing trenches were dug, many



ILLUS 14 The layout of Inchkeith in 1918. The barbed wire entanglements, firing trenches and blockhouses are marked in blue (Authors)

fronted with concrete walls, to cover areas vulnerable to landing (Illus 12). The southern approach to the South Fort was particularly strongly defended by a concrete-lined trench about 75m long, most of which was roofed by railway sleepers (Illus 13).

By 1918, more than half of the perimeter of the island was closed off by barbed wire entanglements and a far more complex series of firing trenches had been dug. By 1915, nine blockhouses had been built at particularly vulnerable points, and this number had increased to 14 by 1918 (Illus 14). The blockhouses were of very varied plan and one at least (No. 5) was provided with a stove for the men occupying it (Illus 15). From a sketch by 2nd Lt A Ross in the possession of his family, we know that at least one of the blockhouses was provided with a portable oxy-acetylene searchlight mounted on a tripod, presumably to illuminate the adjacent shore and cliffs.

Downing Point

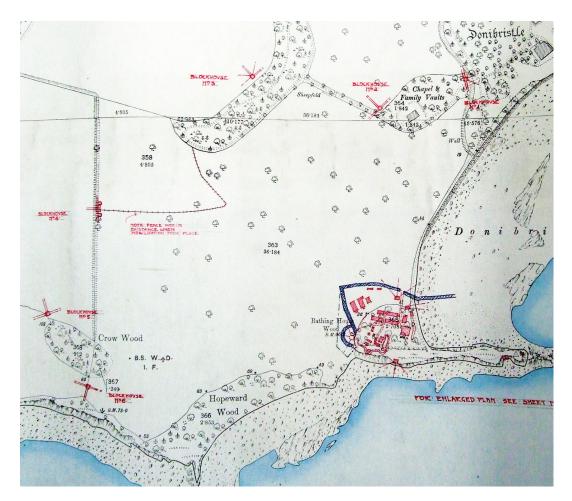
The battery was first proposed in 1912. Construction was eventually undertaken very quickly, in September–October 1914, of a very simple gun platform and ancillary structures in a protected area behind. Two 4.7-inch guns removed from Kinghorn were mounted. Plans of the battery and the camp show strong defences, comprising a close defence of barbed wire entanglements, firing trenches and four blockhouses, with accommodation for the infantry detachment that guarded it, and the garrison of Royal Artillery and Royal Engineers who operated it. There was an outer ring of six blockhouses, at about 400m from the battery (Illus 16; 17).

Braefoot

The landward defences of the 9.2-inch battery at Braefoot were included in the initial designs drawn up in 1912 and seem to have been built, in



ILLUS 15 Blockhouse No. 5 (according to the 1918 numbering) at the south-east corner of Inchkeith, as sketched by 2nd Lt A Ross during the war. Note the stove pipe (courtesy of Mrs Fiona Buchanan)



ILLUS 16 Plan of the Downing Point battery and its outer defences (TNA WO 78/4396 1916)

1914–15, largely according to the plans (Illus 18). The battery had a defended perimeter comprising, from inside out, a firing trench, a 'palisade' fence and a barbed wire entanglement (WO 78/5169 1912). The barracks for the Regular garrison of the battery was incorporated in the perimeter, and the outward facing side and both end walls were loopholed for defence. The construction plan shows the location of a single blockhouse on the highest point of the perimeter (which was also the highest point on the site).

We are fortunate that in 1918 the battery site was mapped in detail by the Ordnance Survey for the War Office, even though it was by then disarmed. Although the original defensive perimeter still existed, two large camps had been built to accommodate the wartime garrison and these were enclosed within a larger barbed wire fence. By 1918, there were ten blockhouses, four in an inner and six in an outer line (Illus 19; 20).

RNAD Crombie and Rosyth

The Royal Naval Armaments Depot (RNAD) at Crombie, west of Rosyth, was more heavily defended during the war than Rosyth itself, presumably because of the vulnerability of such a large concentration of explosives to a relatively minor raid.

The RNAD's defences were mapped in 1915 (Illus 21). As was the norm with explosives

stores, the depot was spread out over a considerable area, comprising about 11 large sheds at the modern beach level and 21 smaller sheds on the raised beach above. Six large underground magazines were also built. Five blockhouses covered a barbed wire perimeter, which obstructed the approaches from the north and along the coast. The location of three anti-aircraft guns was also marked (WO 78/4396 1916).

The overall security of the Rosyth Dockyard relied on the defences immediately to the east, covering the northern end of the Forth Bridge, the Castlandhill radio station and the batteries at Carlingnose and Coastguard.

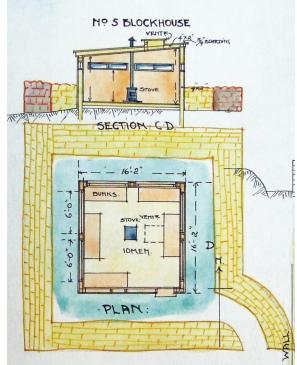
THE FORTH BRIDGE

The Northern Approaches

Until the Kincardine Bridge was opened in 1936, the lowest road crossing of the Forth was at Stirling. The Forth Rail Bridge was, however, regarded as a potential route for enemy infantry, cavalry and artillery to cross the estuary, and as a route to transport British troops. For this reason, and because it was feared that the bridge could be brought down to block the channel, it was defended during much of the period under consideration.

In the 1900 defence scheme, an attack on the Forth Bridge from the north was 'not considered probable', and the possibility of an attack from the south was not even mentioned. By the 1905 defence scheme, both ends of the bridge were to be guarded by detachments, each of one officer and 30 other ranks, from the battery guards at Dalmeny and Carlingnose. Any railway rolling stock was to be moved some distance inland, to avoid it being used by the enemy to cross the bridge.

In the 1907 defence scheme, an infantry reserve battalion was to be stationed at Carlingnose, which would take care of the security of the northern end of the bridge and the two coast batteries. The security of the southern end of the bridge was to be managed solely by the



ILLUS 17 Plan and cross-section of one of the Downing Point blockhouses (TNA WO 78/4396 1916)

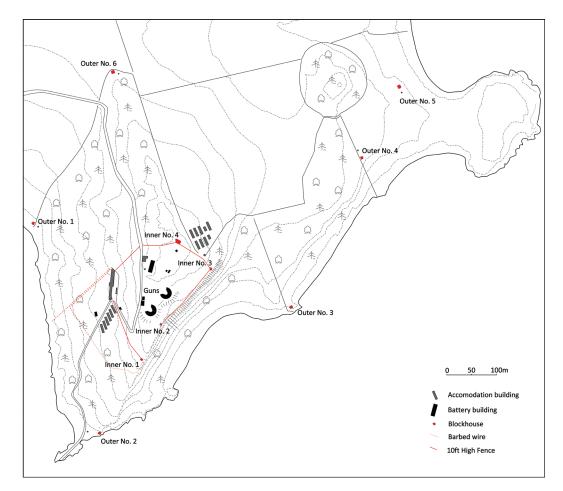
company-strength infantry garrison of Dalmeny battery (WO 33/444 1907).

By 1909, the defence of the north end of the bridge was to be fully integrated into the defence of Carlingnose and Coastguard batteries. A single company of infantry was allocated to this task with a section-sized detachment on Inchgarvie, tasked specifically with observing the piers of the bridge. The scheme specifically stated that 'the most important positions are those covering the north end of the Forth Bridge and the works at Rosyth. They must be held at all costs ...' (ibid).

The northern end of the Forth Bridge lands on a broad peninsula, on which the Coastguard and Carlingnose batteries were also sited (Illus 22). In the First World War, both batteries were provided with close defence – firing trenches; barbed wire entanglements facing the coast and inland. The northern end of the peninsula was closed off by a complex line of firing trenches, along which



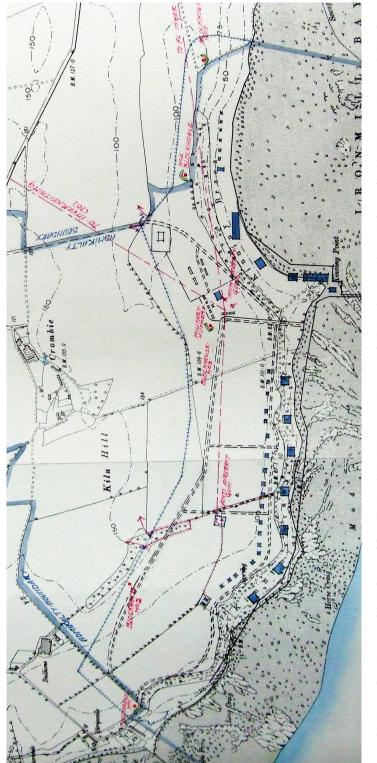
ILLUS 18 The original 1912 plans for the battery and its defences at Braefoot (TNA WO 78/5169 1912)

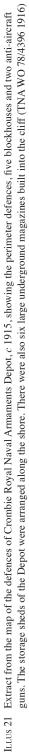


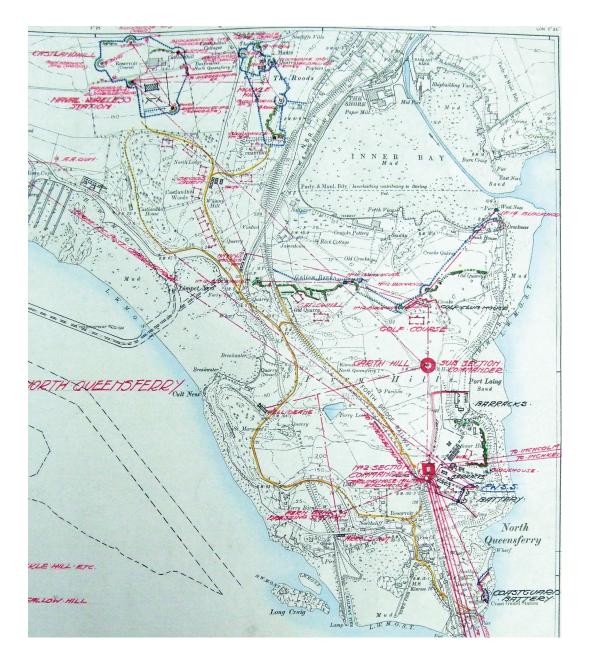
ILLUS 19 Plan of the defences of Braefoot, as they had developed by 1918 (Authors)



ILLUS 20 Braefoot blockhouse No. 2 in the Braefoot outer line (Authors)







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ILLUS 22 Map, dated 1916, showing the complex defences of the northern approaches to the Forth Bridge, integrated with those of the Castlandhill Naval Wireless Station (TNA WO 78/4396 1916)

there were five blockhouses (numbers 10 to 14 in the overall scheme), fronted by barbed wire entanglements. The western end of the line lay at NT 1244 8168, the eastern at the foot of the pier at Crookness (NT 1354 8201). The western end

of the line covered the road and rail approaches to the bridge.

To the north, an additional line of defence was provided, to the west of the main road, by the heavily defended perimeter of the Castlandhill

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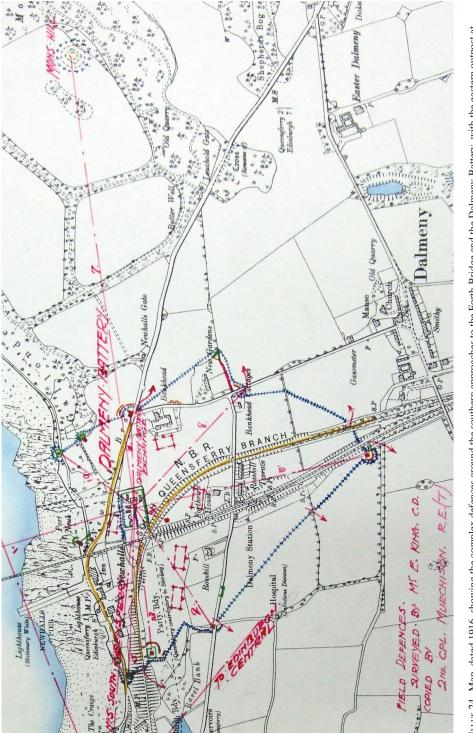
ILLUS 23 The south-eastern blockhouse at the Castlandhill Naval Radio Station, from the north-west (Authors)

Naval Radio Station, which included five blockhouses. Three were made of concrete and survive: at the south-east corner of the site (NT 18 SW 222.01: NT 12058 82551); at the north-east (NT 18SW 222.02: NT 12095 82742) and at the west side (NT 18SW 222.03: NT 11905 82635) now very heavily overgrown. The north-east and south-east blockhouses are both about 5m square with chamfered corners and 12 loopholes (four on the sides and eight on the corners). Entrance was gained by means of a low doorway below a loophole (its top just visible slightly right of centre on Illus 23). The blockhouses were not provided with concrete roofs - instead they seem to have had timber roofs supported on six beams, for which slots were provided in the wall-tops (Illus 23).⁵

Immediately to the east of the main road there was a strong redoubt with four further blockhouses, effectively controlling access to the south; the redoubt was extended for about 350m to the south, where firing trenches and two further blockhouses covered the site of a possible landing in Inverkeithing's Inner Bay.

The Southern Approaches

The defences of the southern approaches were intimately combined with the defences of the immediately adjacent Dalmeny Battery (Illus 24). The defence of the bridge consisted of a single boundary, about 2.1km long in total, formed of barbed wire, with blockhouses and other strongly defended positions at corners and both terminals. The western end of the boundary, on the shore, was at NT 1340 7827, where a blockhouse covered the road from South Queensferry, along the front. The wire zig-zagged to the upper road along the coast, from west of Dalmeny Station, where a blockhouse at NT 1354 7801 covered a road junction. The boundary continued straight south-east across the fields to a third blockhouse, adjacent to the main rail line, at NT 1423 7791. The wire turned north-east, to Bankhead Cottage which, along with adjacent walls, seems to have been fortified to cover the road running north from Dalmeny village. The main road from Edinburgh was covered by a further blockhouse at NT 1417 7823. Two further blockhouses, at NT 1410 7836 and NT 1406 7844, closed off the







ILLUS 25 Map extract showing the defences round the Hound Point Battery, and the cross-section of a blockhouse (TNA WO 78/4396 1916)

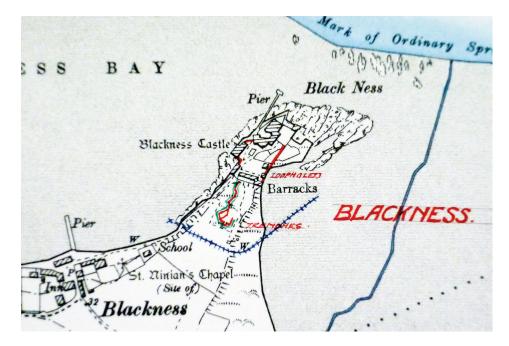
approach from the east. There was a further firing position on the shore, in front of the Dalmeny Battery searchlights, at NT 1381 7814. Four infantry concentration areas were marked within the defended perimeter.

The HQ of the defences was at Dalmeny Battery, whose telephone exchange was linked to all the blockhouses and strong points, to South Queensferry and to a subsidiary defended post on the summit of Mons Hill, 1.3km to the east of the battery.

LOTHIAN

Hound Point

The battery at Hound Point had first been proposed before the First World War and was completed in December 1914. It originally mounted two 6-inch



ILLUS 26 The defences of Blackness Castle in the First World War (TNA WO 78/4396 1916)

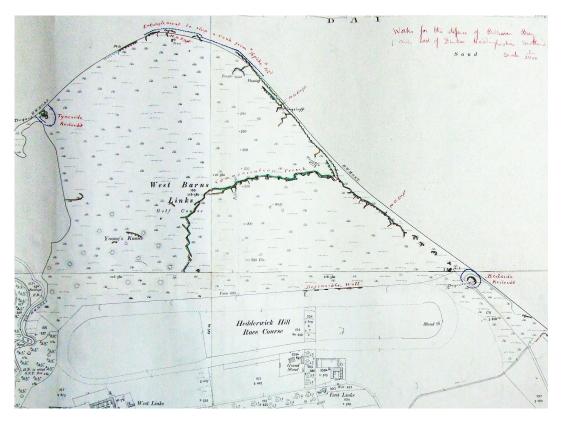
BL Mk VII guns, which were replaced in 1916 by two 12-pdr (Naval) 18cwt guns moved upriver from the Middle Defences. By June 1915 it was protected by a dozen blockhouses, arranged in two lines, inner and outer, each of six (Illus 25). As in most cases elsewhere, the blockhouses were made of timber.

Blackness

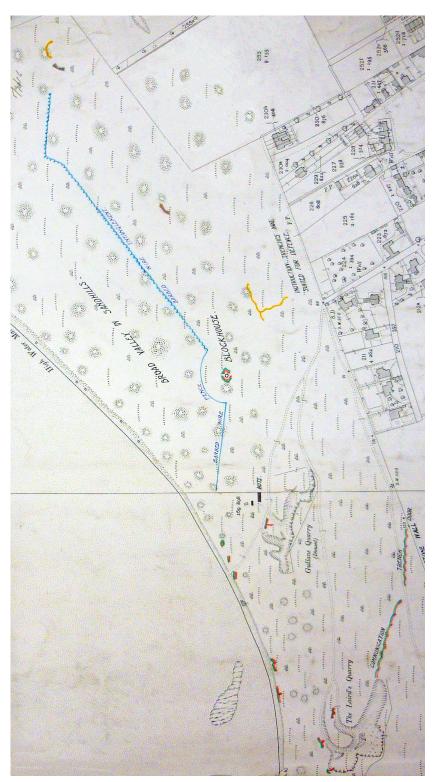
Blackness Castle has been the property of the Scottish and then the British Crown since 1453. In 1870 the castle became the main ammunition depot for Scotland, after the risks of storing so much powder at Leith Fort, in the middle of a densely inhabited area, had been forcibly pointed out by the Town Council. The depot remained in use until 1912. It was reoccupied during the First World War, but we do not know exactly for what purpose, unless the expanded need for ammunition storage resulted in the reopening of the store. Whatever it was used for, it was defended (Illus 26). The peninsula on which the castle was built was cut off by a barbed wire entanglement, behind which complex firing trenches were dug. The east- and west-facing walls of the castle were marked as 'loopholed', although it is not clear if new loopholes were cut, or existing ones reused. Allan Kilpatrick (pers comm) reports one surviving loophole on the southern side of the current ticket office and shop at the castle.

Dunbar

The defences at Dunbar covered the beaches to the west of the town, in the area of dunes known as West Barns Links. Two 'redoubts' were built at the west ('Tyneside', overlooking Belhaven Bay) and the east ('Bielside'). Between the two the coastline was defended by discontinuous firing trenches and barbed wire

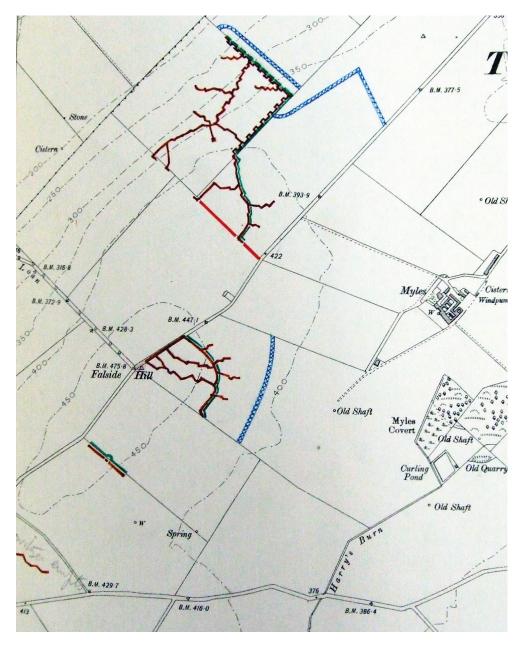


ILLUS 27 The defences west of Dunbar (TNA WO 78/4396 1916)



ILLUS 28 The defences north of the village of Gullane (TNA WO 78/4396 1916)

entanglements, incorporating four machinegun emplacements. The coastal firing trench was reached by a long communication trench towards the south-west. A 'defensible wall' along the northern boundary of Hedderwick Hill race course provided a second line of defence. Allan Kilpatrick (pers comm) reports that some trenches are extant. This area was defended again in 1940–1 (Barclay 2013: 280–5) (Illus 27).



ILLUS 29 The east-facing defences on Falside Hill, east of Edinburgh (TNA WO 78/4396 1916)

Gullane/Aberlady

The defences at Gullane covered the beaches to the north of the town and the beaches forming the east side of Aberlady Bay. These were defended again in 1940–1 (Barclay 2013: 278–80). The First World War map showed the location of existing parapets and trenches and 'proposed additions', in yellow (Illus 28) (WO 78/4396 1916).

Covering the north of the town was a blockhouse with a wire fence to its north and west, and a barbed wire entanglement to the north-east. In the same area, trenches are marked as 'instruction trenches not suited for defence'. A stone wall to the north-west of the town was marked in such a way as to imply that it was to be used as a firing position. To the west of the blockhouse was a series of nine firing trenches, one at the Gullane Quarry, three at the Laird's Quarry (linked by a communication trench to a stone wall) and five just above the beach. Two huts were marked, probably to accommodate the garrison.

Covering the east shore of Aberlady Bay were four widely spaced firing trenches overlooking the north-west corner of the dune system (as well as three further 'Instruction trenches', not illustrated).

The 'Aberlady Group' of defences comprised two lengths of barbed wire fence and entanglement running west to east, inwards from the coast. About nine firing trenches were positioned behind and between them, facing out to sea, with another group of three huts, probably to accommodate the garrison.

The Prestonpans area

A discontinuous defence line was built inland from Prestonpans. At the coast, the eastern wall and half the length of the southern park walls of Prestongrange House were prepared for defence, a length of about 860m from NT 3791 7408 to NT 3791 7341. The wall is now above head height, but shows signs of having been raised from waist height. The eastern side was fronted by a barbed wire entanglement. These firing positions covered the minor road along the coast (to the north), and the more significant road from Preston towards Edinburgh.

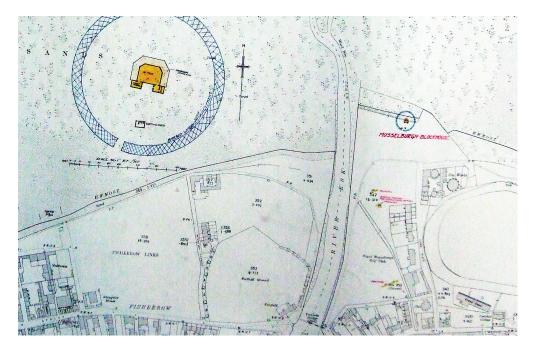
Firing positions were placed beside the main A1 road, just west of Tranent, and a 430m-long barbed wire entanglement ran south from the road, at Dolphingston Toll (NT 3754 7270 to NT 3777 7232).

The most heavily defended road was what is now an unclassified road running south-west from Tranent towards Falside Castle, along the ridge of Falside Hill, which commands the coastal plain to the north. Very extensive and complex firing positions, with equally complex communications trenches, were constructed to the north (at NT 3844 7201) and south of the road, the southern positions being set about 260m farther west (at NT 3832 7136). Two further backup firing positions were situated 250m and 650m farther south-west. The western was labelled on the map as 'Howitzer empts' [emplacements] at NT 3789 7081 (Illus 29).

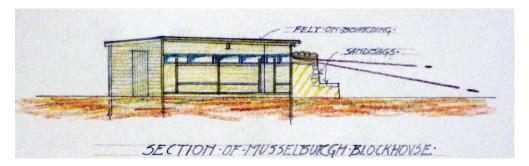
The southernmost element of the defence comprised infantry positions 480m west of Elphinstone Tower, south of what is now the B6414 road, from Tranent to Dalkeith (at NT 3855 6979).

Two blockhouses on this stretch of coast, at Musselburgh and Westpans, were recorded in May 1916 (WO 78/4396 1916). The mouth of the River Esk at Musselburgh was guarded by a blockhouse, which was no more than a simple timber hut with a shallow pent roof, and made bulletproof by an embankment of sandbags on its vulnerable sides. The file (ibid) contains a 1:10,560 map showing the location of the blockhouse and, as an inset, a larger scale plan (Illus 30); a different map has an inset of a crosssection (Illus 31).

The Westpans defences were more complex. Once again, the blockhouse was a simple wooden hut with sandbags built around it, except at the rear. It had beds for 12 men and they were provided with a separate cookhouse and store behind the blockhouse. There were three firing trenches, to the west, north-west and north-east of the blockhouse, and a sentry box, all fronted by a barbed wire entanglement along the top of the beach. Earth closets for the garrison were located at the south-west edge of the complex.



ILLUS 30 1:10,560 map showing the location of the Musselburgh blockhouse and, inset to the left, a larger-scale plan. See Illus 31 for a cross-section (TNA WO 78/4396 1916)



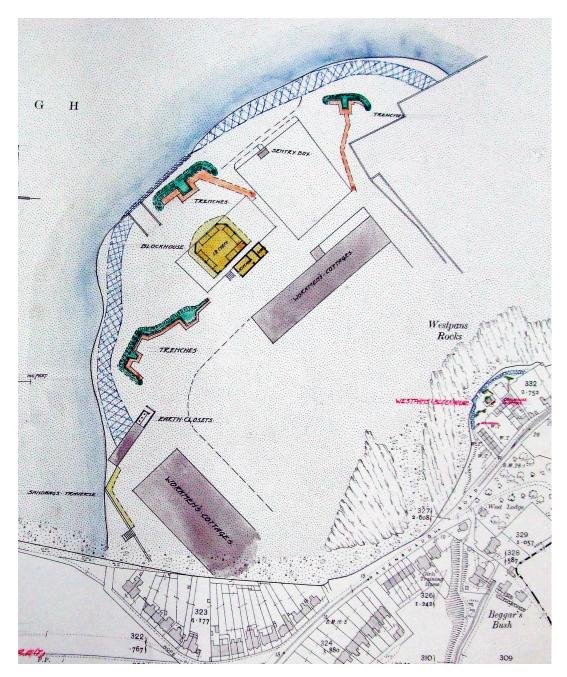
ILLUS 31 Cross-section of the Musselburgh blockhouse (TNA WO 78/4396 1916)

A larger-scale plan and cross-section were also provided (Illus 32; 33).

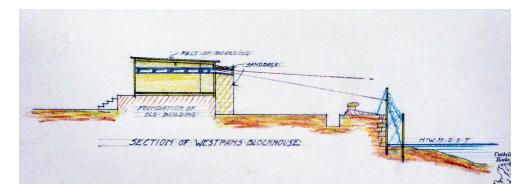
Edinburgh

A series of six War Department maps dated 1916 (on file WO 78/4396 1916) shows the location of a complex of defences protecting Edinburgh from attack from the east. The defences comprised barbed wire entanglements, firing trenches (some of considerable extent and complexity) and defended walls. Some of the firing positions were approached from the rear by complex communication trenches. The defences ran from the coast at Seafield to Duddingston and round the south side of Holyrood Park to Craigmillar, to Liberton Tower and ending just north of Mortonhall. The northernmost section of the defence, at Seafield, had a forward line of defence to its east, at Craigentinny. The defence line was split into three sections. Section 1 covered Seafield to Duddingston. Section 2, Duddingston Loch to Mayfield Road, beside what is now the King's Buildings of the University of Edinburgh,

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ILLUS 32 1:10,560 map showing, in the right and bottom edges, the location of the Westpans blockhouse and its associated firing trenches and service buildings. Most of the image is occupied by a larger-scale inset showing more detail of the complex (TNA WO 78/4396 1916)



ILLUS 33 Cross-section of the Westpans blockhouse and the firing trench in front of it (TNA WO 78/4396 1916)

and Section 3, from there to the southern terminal.

Section 1 of the defences covered the eastern side of the city from the coast at Seafield to Duddingston (Illus 34). The Section 1 commander was based at Piershill Barracks and was linked by telephone to HQ at Leith Fort and to seven subsidiary command positions on the defensive line.

At the coast, along which an enemy force might be most likely to advance, there were two widely separated lines of barbed wire entanglement, touching the coast to the south-east and north-west of the Edinburgh Marine Gardens at Seafield (an area now occupied by a mass of car sales sheds).⁶ The eastern barrier was backed by a near-continuous trench with strong points. The former Chocolate Works (subsequently the W M Ramsay Technical Institute), still standing at the junction, was clearly a strong point. Most of the length of the beach between the two defence lines was also blocked off by a barbed wire entanglement.

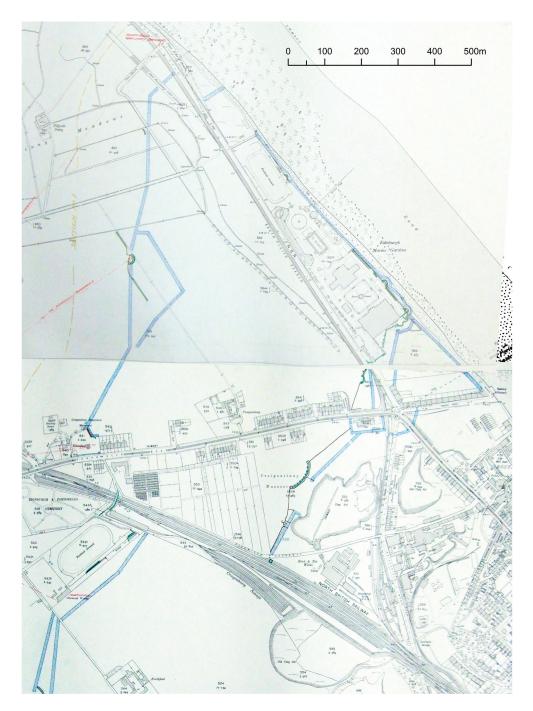
Where the wire entanglements crossed the next main road (Willowbrae Road) there was a major strong point formed by interlocking trenches. The wire entanglement ran southwest for about 750m to the eastern edge of Duddingston Village. The south and south-east approaches to the village were obstructed. A final length of wire closed the gap between the village and Duddingston Loch. This formed the southwest end of Section 1 of the defences.

A major hutted camp, the base for the 3rd (Reserve) Battalion King's Own Scottish Borderers from 1916, lay a little to the east of the defences, in Duddingston Park.

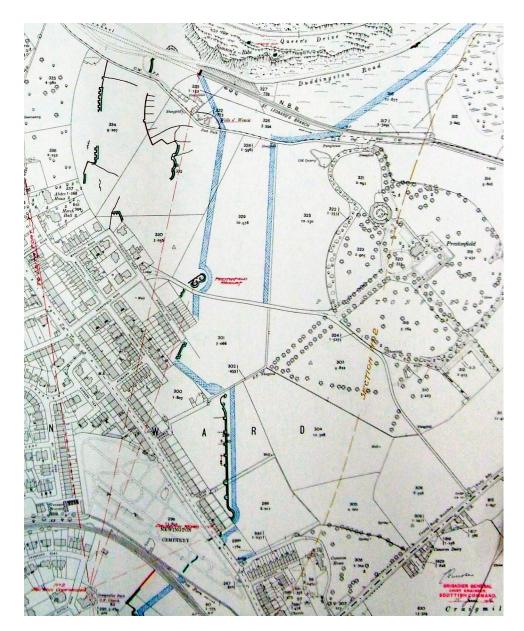
Section 2 of the defences ran from Duddingston in the north-east to Liberton (Illus 35). The Section Commander was based in the United Free Church at Craigmillar Park and was linked to the Fortress Commander at Leith Fort and to six subsidiary posts on the line.

This section of the Edinburgh defences started at the west end of Duddingston Loch and ran, as a double line of barbed wire entanglement, across what is now Prestonfield golf course. Behind (west of) the inner line were complex firing positions with communications trenches and, near the western end of the drive to Prestonfield House, a fortification labelled 'Prestonfield Redoubt'. Two machine guns were mapped as sited on Samson's Ribs.

The entanglement continued southwards, behind the tenements of Dalkeith Road, with a continuous firing trench behind it. There were firing trenches in Newington Cemetery and the barbed wire resumed on the south-west side of the railway line, covering the front of the United Free Church in Suffolk Gardens (NT 2713 7140), which was the Section Commander's HQ. The stone wall along the south side of Lady Road was loopholed. Firing positions were placed along Hallhead Road, at that time the southern edge of the built-up area. This marked the south-west end of Section 2 of the defences.

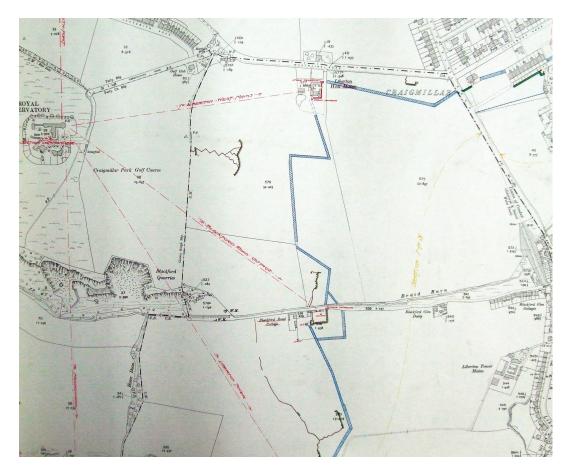


ILLUS 34 Extract from two of the maps of the defences of Edinburgh in 1915, showing the double line of defences and coastal barrier, at Seafield, at the northern end (TNA WO 78/4396 1916)



ILLUS 35 Extract from one of the maps of the defences of Edinburgh in 1915, showing the barbed wire barriers, firing and communication trenches running south from Holyrood Park. The Section Commander's post was in the United Free Church, at the bottom left. Two machine-gun positions are marked on Samson's Ribs (TNA WO 78/4396 1916)

Section 3 of the defences ran from Liberton at the north-east to the southern end of the defensive line, at Meadowhead Farm (Illus 36; 37). The Section Commander was based at the Royal Observatory at Blackford Hill. The commander was linked by telephone to Leith Fort and to four subsidiary posts; the southernmost was in Liberton Tower. The barbed wire entanglement resumed against the west end of the houses on Hallhead Road, running westward across

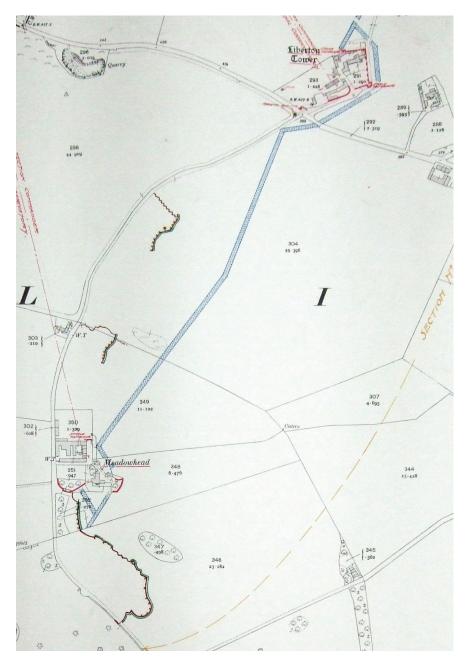


ILLUS 36 Extract from one of the maps of the defences of Edinburgh in 1915, showing the barbed wire barriers, firing and communication trenches. The Section Commander's post was in the Royal Observatory (TNA WO 78/4396 1916)

open fields to Liberton West Mains farmhouse, whose walls were prepared for defence. The entanglement turned southwards from the farm; 130m west of the barbed wire there was a complex firing position (NT 2631 7061 to NT 2629 7052), accessed by a 110m-long zig-zag approach trench (still visible on the ground: Allan Kilpatrick, pers comm). The barbed wire entanglement continued south with a firing position behind its central point (at NT 2657 6989) and crossed the Braid Burn at Blackford Road Cottage, around which there were firing positions. The barrier continued to Liberton Tower, the courtyard walls of which were used for defence. It turned SSW for about 650m, with two firing positions about 100m behind, to Meadowhead Farm, which was heavily fortified. It is of this point that we have our single known image of the defences in 1914, a photograph in the collection of Major David Huie of the 9th Battalion, The Royal Scots (Illus 38). The barbed wire entanglement ended about 60m south of the farm, and the southern end of the defences comprised a single continuous, curved firing trench, about 250m long.

DISCUSSION

Only one photograph has so far been found of any of the First World War entrenchments dug in eastern Scotland (Illus 38 below). This shows a trench fronted by a parapet made of sandbags. This conforms in principle if not in detail with the instructions provided in the then current *Manual*



ILLUS 37 Extract from one of the maps of the southernmost section of the defences of Edinburgh in 1915, showing the barbed wire barriers, firing and communication trenches. The defences immediately south of Meadowhead are also shown in Illus 38 (TNA WO 78/4396 1916)



ILLUS 38 A photograph of the defences immediately south of Meadowhead farm, Liberton. The firing positions take the form of a trench fronted by a loopholed sandbag parapet. They are exactly as shown on the contemporary map (Major D Huie)

of Field Engineering (War Office 1911: 25-8). The Manual (ibid: 29) also laid down that fire trenches vulnerable to flanking fire were to be set out with traverses - that is, the trench was to be broken up into segments by walls of undug soil between them; traverses are visible on Illus 38 and on the maps of the defences of Edinburgh (eg Illus 35 – the traverses are marked by the notches in the trench line). As noted above, many of the fire trenches were provided with communication trenches, to allow the firing trenches to be approached safely from the rear, protected from enemy fire; this conforms with the instructions in the Manual (ibid: 29). The only information on the detailed construction of the trenches is that provided by Illus 38. The plans and crosssections of some of the timber blockhouses built around the coast defence batteries and on some of the other defensive positions were recorded (eg Illus 17). Two 'redoubts' near Kinghorn were also drawn (Illus 9). These and other elements of the defences, where recorded (eg wire entanglements), are recognisable from the illustrations in the Manual of Field Engineering (ibid: plates 16-30). The Manual explicitly states that 'the works illustrated in the plates should be regarded as types only and should be varied to suit local conditions, every effort being made to save time, labour and material ...' (ibid: 25).

The defences described here, whether merely planned or actually built, reflected growing concerns about the vulnerability of the east coast to raids by a continental power. The defensive systems built to protect London and its approaches were designed to deal with largescale invasion (Osborne 2017: 84); those around the Forth and Tay were designed to deal with raids by a few thousand men. It is reasonable to ask if the defences were needed: was such a 'raid' a credible threat? We suspect that no such threat existed. An oddity of British military planning before the 1930s was that it took no account of the possibility that the armed forces of a potential enemy might have a different basic ethos and 'exercises were conducted on the assumption that enemy forces would be organised and equipped, and would operate, in the same way as the British' (French 2000: 45-6). Dildy (2007: 20) has argued that, as a primarily continental power, Germany did not fully understand the possibilities offered by maritime power: while they understood the capacity of surface raiders

and U-Boats to disrupt supply lines, they were not, unlike Britain and the USA, 'expeditionary minded' in the sense of being able to project military force across long distances by sea. That is, the UK was planning to defend itself against the sort of large-scale raid that Britain launched during the Second World War on the Lofoten islands, for which the Germans had neither the psychological or military capacity to undertake (Barclay 2013: 30).⁷

Thus, while it was shown that traditional coast defence guns were needed, by the German bombardment of English coastal towns in 1914 and 1916, the anti-invasion defences built in the Tay and Forth, and at Cromarty, were never going to be needed.

As noted above, we have found evidence that the defences were fully manned only in the early months of the war. Thereafter it is possible that they were only lightly manned by locally based troops. The fact that they were mapped in 1915–16 suggests that they were not, however, abandoned. Osborne (pers comm) in his work on the Volunteer Training Corps (the nearest First World War equivalent to the Home Guard) has noted that two battalions were raised in Dundee, one in Edinburgh, one in East Lothian and two in Midlothian (around 12,000 men). It is possible that these troops, in addition to their other duties, replaced the first- and second-line Territorial units which had manned the defences early in the war, in their anti-invasion role.

CONCLUSION

We wished in writing this paper to shed new light on the plans for the defence of eastern Scotland before and during the First World War, and the planning in earlier years that informed what was eventually built, in addition to the better-known coast defence batteries (Barclay & Morris 2019). The military role of the estuaries is slipping from the popular memory. While much remains of the defences built in 1940, very little remains of those built in the First World War. Much of Inchkeith's close defence still stands, but elsewhere, the blockhouses at Braefoot, Castlandhill, Inchkeith, Kinghorn and earthworks like Spiershill Fort, are rare survivals. The records of the defences both planned and built attest to the importance of the naval infrastructure in the Forth, and the importance of the ports in both estuaries.

ACKNOWLEDGEMENTS

We are very grateful to Allan Kilpatrick for providing information on a number of sites, for alerting us to the existence of Major Burnet's photographs, and for reading an earlier version of this paper. Mike Osborne provided invaluable advice. We are also grateful to the staff of Inverclyde Museum for copies of Major Burnet's photographs, and Neill Gilhooley for a copy of Major Huie's photograph.

NOTES

- 1 Childers' novel has been retrospectively credited with waking up a somnolent government to the risk of such an attack, and even of identifying the need for a naval base on the east coast. Neither is true: the government was already aware of the risk, having been preparing defence schemes since at least 1899, and announced the building of Rosyth some two months before Childers' book was published. The most concise and readable summary of the 'invasion novel' genre is in Osborne 2017: 23–6.
- 2 The 'Examination Service' was operated by the Royal Navy at defended ports. Any suspect vessel could be held for examination in a designated anchorage under the guns of the 'Examination Battery'.
- 3 A harbour providing shelter for vessels in distress or in severe weather.
- 4 A Port War Signal Station (PWSS) was a naval installation, the main function of which was the identification of shipping approaching or within sight of the port. The naval Extended Defence Officer responsible for the floating defence (antisubmarine precautions and patrol vessels) would be based there.
- 5 The position of the surviving south-east blockhouse does not coincide with the position marked on the First World War map on WO 78/4396. Close inspection of the modern and older maps suggests that a mapping error was made at the time, locating the blockhouse in

relation to an older fence line, not that defining the radio station's compound.

- 6 The buildings of the Marine Gardens were requisitioned as barracks and were, for a time, the base of the 3rd (Reserve) Battalion of the King's Own Scottish Borderers.
- 7 The German expedition against Norway, a surprise attack against a poorly prepared, illarmed and nearby neutral power, does not, we believe, undermine the argument.

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Six O'Clock in Princes Street: an analysis of Wilfred Owen's Edinburgh 're-education'

Neil McLennan*

ABSTRACT

The First World War poet, 2nd Lieutenant Wilfred Owen, is remembered for his powerful testimony of war via his anti-war poetry. However, there has been limited focused investigation of Owen's four months in Edinburgh between 26 June 1917 and 3/4 November 1917 and the impact of that period. Owen was in Edinburgh convalescing from 'shell-shock' at Craiglockhart War Hospital; his doctor called it 're-education'.¹ Fresh research and analysis has been able to confirm the Scottish inspiration of a number of aspects of Owen's poetry: from Owen's first visit to Scotland, holidaying in 1912, and his four-month stay in Edinburgh in the latter half of 1917.

During late 1917 Owen was able to craft some of the most poignant war poetry of the century, if not all time. That writing was made possible by the Edinburgh environment and important meetings in the social circles he benefited from in the city. It was facilitated by innovative 'work' cures, or ergotherapy, being implemented at Craiglockhart by Edinburgh-based physician Dr Arthur John Brock. Brock had been inspired in his medical thinking by Professor Sir Patrick Geddes. Geddes would evolve sociologist Le Play's Lieu, Travail et Famille heuristic method and propose three themes as determinants of society: Place, Work and Folk. Geddes' sociological survey model provides useful lenses for a more in-depth consideration of the socio-cultural impact of Edinburgh and its people on Owen and his writing.

INTRODUCTION

Wilfred Edward Salter Owen joined the Artists' Rifles in October 1915. He was commissioned into the Manchester Regiment in June 1916 and arrived on the Western Front in early 1917. He was injured in March 1917 and again in May 1917. His second time at a Casualty Clearing Station was for 'shell-shock'. The mental wounds received would see him moved to a General Hospital behind the lines before being brought back to Britain. He arrived at Edinburgh's Craiglockhart War Hospital on 26 June 1917. His time in Edinburgh, up until November 1917, would see some of the most powerful poetry of the war written. Owen had written poetry before, but not of the power and poignancy that he did while in Edinburgh.

In-depth analysis of the influence of Edinburgh on Owen reveals some interesting

finds which shed new light on Owen in Edinburgh and the impact the city had on him. These include being able to confirm the meeting venue for a significant literary meeting between Wilfred Owen, Siegfried Sassoon and Robert Graves in the Scottish capital city; a deeper analysis of key Edinburgh figures helped Owen's 're-education' who and influenced his poetry; shedding light on the Scottish influences on Owen's unique poetic style, pararhyme; and also adding new evidence to the scale of Owen's published poetry during his lifetime, some of which was published in Edinburgh.

It is in Scotland that we can see the most significant aspects of Owen's literary education and a prolific period of writing poetry. Owen had six poems published in his lifetime, three of which were published in Edinburgh. This overview offers a new perspective on the scale of

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his works and people and places that influenced Owen. In the Edinburgh environment, Owen had the space, permission and encouragement to write. Owen was inspired to write as a result of certain places in Edinburgh, some of which he featured in his poems. He was also influenced by key Edinburgh people such as his fellow Craiglockhart War Hospital 'patient' Siegfried Sassoon and Brock, the Edinburgh doctor who supported Owen's recovery at Craiglockhart War Hospital, among other enlightened Edinburgh figures who expanded Owen's thinking. The confirmation of six poems published in his lifetime adds to our overview of his literary work and legacy. Without his time in Edinburgh we might not have seen the powerful poetry captured and shared in 'Dulce et Decorum Est' and 'Anthem for Doomed Youth'.

'Anthem for Doomed Youth' is very much influenced by his time in Edinburgh, and 'Dulce et Decorum Est' was also written in Edinburgh. It was written just before the 13 October 1917 meeting at Baberton Golf Club, which recent research has been able to reveal. Owen's most famous war poem, about a gas attack, was drafted just before, and then redrafted just after, that meeting. While the war was clearly the main influence and focus of Owen's poetry, it was the environs, time, people and the work that allowed the words to come together.

This paper will see Patrick Geddes noted as one of Owen's key influencers even though the two probably did not even meet. Moreover, the paper will take a Geddesian approach for it will be structured in the form of Geddes' 'Place, Work, Folk' model as a lens through which to view influences on the First World War poet's life and work. Geddes' construct, which emerged from his initial botanical thinking on environment, function and organism, evolved into a sociological model with consideration of Geography, Economics and Anthropology. Just as Geddes had shared his 'Valley Section' as a way to give an economic interpretation of history through the land people inhabit, he also shared some basic principles of social analysis through looking at society through the lens of place, work, folk, and combinations of these.2

EXISTING LITERATURE

Well-respected literary accounts mention Owen's Edinburgh recovery, however, it might be seen as a passing chapter in Owen's development. Stallworthy (1974) and Hibberd (1992, 2003) and more recently Cuthbertson (2014) and Potter (2014) - are all authoritative in their analysis of Owen, although perhaps short on their coverage of Edinburgh. Stallworthy pioneered Owen studies. His work was the first full historical account, albeit from a primarily literary viewpoint. Since then, literature academics have analysed Owen and his poems but, to date, no historian has published in-depth analyses on Owen's Edinburgh work, people and places. Analysing Potter's magnificent illustrated work of Owen's life shows just over half a dozen pages afforded to Owen's Edinburgh medical treatment and education - despite this being such a formative part of his life and moreover his literary development.

Hibberd is perhaps seen as the authority on Wilfred Owen. His work on Owen's last year (published 1992) in actual fact takes in more than the poet's final year. It starts with Owen arriving back in England on 16 June 1917, his time in Edinburgh from June to November, and ends with his death in November 1918. Thus it covers around the last 18 months of Owen's life, just under a quarter of which, four months, was spent in Edinburgh. Hibberd's work affords 41 pages of his 194-page work to Owen's time in Edinburgh. The percentage of coverage in the book focused on Edinburgh is around the proportion of time Owen spent in Edinburgh in that last year and a half. However, Hibberd's initial work is ripe for further research and, in particular, research specifically focused on Edinburgh.

More recently Cuthbertson (2014) has published an account of Owen's life but while it increased interpretation on 'Brock's ladies' and the artistic class Owen met with in Edinburgh, there is still much to learn regarding Owen's Edinburgh. As we can see, there is a gap in our knowledge and accounts of Owen in Edinburgh and a full, detailed analysis and interpretation of this period, at the end of 1917, is long overdue. There are only two works focusing solely on Owen's time in Edinburgh: although Pat Barker's (1992) *Regeneration* and Stephen MacDonald's (1983) *Not About Heroes* are both wonderful works, they are both fictional.

OWEN'S JOURNEY TO EDINBURGH

When the First World War started, Owen was in France. He did not join the army immediately, although he did consider signing up for the French army or Italian cavalry. Almost a year into the war, Owen joined the Artists' Rifles Officer Training Corps in Britain. On 4 June 1916 he was commissioned as a 2nd Lieutenant in the Manchester Regiment and first saw action in the Somme area. He was soon to be a casualty. His first time in a Casualty Clearing Station was a result of falling into a shell hole. Recovering from concussion, he returned to the front. He was later blown up by a trench mortar and spent days unconscious in the carnage that the First World War ravaged across the French and Belgian countryside. On regaining consciousness, Owen found himself surrounded by the remains of one of his fellow officers, 2nd Lieutenant Gaukroger. Diagnosed as suffering from 'war neuroses' Owen was transferred to one of the two reception centres for war neuroses, the Royal Victoria Hospital (also known as the Welsh Hospital, Netley). He was then moved to one of Britain's six 'shell-shock' hospitals for officers. Owen could have been sent to any of the following hospitals across the UK: Fourth London General Hospital, Maudsley, Denmark Hill, London (officers and men); Lechtmere House, Ham Common, London (officers only); Red Cross Military Hospital, Moss Side, Maghull, near Liverpool (officers and men); Royal Victoria Hospital, Netley (officers and men); Special Hospital for Officers, 10-11 Palace Green, London (officers only); and Craiglockhart War Hospital, Slateford, near Edinburgh (officers only).

Owen spent 126 days at Craiglockhart Hospital. It was perhaps fate that saw Owen, the aspiring and developing poet, sent to what is now a City of Literature. Edinburgh has a rich seam of literary greats, history and heritage, and an enlightened environment in which Owen immersed himself. One might consider his potential literary life and legacy if Owen had been sent to any of the other 'shell-shock' hospitals or had been treated by doctors with more 'traditional' approaches to the condition.

Wilfred Owen travelled to Edinburgh by train on 25/26 June, and entered Craiglockhart War Hospital in Edinburgh on 26 June 1917. Craiglockhart was a former Hydropathic Institute which was requisitioned as a war hospital in October 1916. Owen was placed under Dr Brock's care. The formative ideas Brock gained from Aberdeenshire-born Patrick Geddes were vital in establishing the treatments which Owen was to receive.

If we take Geddes' model of what influences life – place, work and folk – we can have a unique insight to Owen's Edinburgh and the place he called his 'free-and-easy Oxford'.³ While 'Dulce et Decorum Est' and 'Anthem for Doomed Youth' might be the most powerful poems written in Edinburgh, we can see other poems like 'Six O'Clock in Princes Street' as part of his poetic progression and development. There were many key places influencing his work, alongside influential Edinburgh figures or groups of people who helped Owen's development.

FOLK

A key assertion of this analysis is that Brock, and Brock's influencer Geddes, were influential in Owen's poetic development in Edinburgh, as well as other Scottish socio-cultural figures who supported Owen's development. It is not known if Owen met Professor Sir Patrick Geddes in person.⁴ However, we know of the influence Geddes had on Dr Brock's treatment plan for Owen, which allowed for broad thinking, space, time and a focus on poetry and writing. Without it we might not have seen the powerful poetry we now associate with the war. Owen was to meet many other enlightened figures of the time that indirectly helped to influence his poetry, expanding his ideas and contributing to an intellectual enlightenment which he had hoped to be part of at university but unfortunately circumstances and the war never allowed him. Those contributing to his enlightenment were from an eclectic mix of Edinburgh individuals, many of whom were linked to Dr Brock, although not exclusively.

PATRICK GEDDES

Patrick Geddes was born in Ballater in 1854, the son of Alexander and Janet Geddes. He was to become an international enlightened figure and polymath with impacts on the fields of botany, sociology and town planning. He secured a job at the University of Dundee and had a reference from Charles Darwin. As well as developing Outlook Tower (now Camera Obscura) in Edinburgh, he also established university halls in Edinburgh as self-governing hostels which were also areas of knowledge and cultural exchange. Geddes' archives show him to be a prolific correspondent with many figures across the world, on many topics. Furthermore, a band of dedicated followers corresponded with him and were influenced by his thinking.

The foundations for Owen's Edinburgh enlightenment had been set before Owen arrived anywhere near Scotland. This was as a result of Geddes, whose work, long before Owen was even born, laid the foundations for a progressive liberal treatment, 're-education', and indeed cultural education which Owen received while in Edinburgh. Geddes' pre-war letters to Edinburgh physician Arthur John Brock helped shape Brock's thinking on how to treat patients. These resulted in the new approaches Brock used to treat the broken men who were 'shell-shock' victims at Craiglockhart War Hospital, among them Wilfred Owen.

Owen had been a poet before and Brock used this hook to reactivate writing as part of his recovery. Owen's first writing task was at Outlook Tower, which had been set up by Geddes. Patrick Geddes had set up this museum to mankind, a sociology observatory capturing his vast array of interests from 'the region' to internationalism. Brock sent Owen there at the very start of his treatment and time in Edinburgh.

It is unlikely Geddes was in Outlook Tower when Owen visited. If Geddes had been there,

Owen would probably have mentioned it in his letters. Geddes was known for rapidly taking his visitors to the top of Outlook Tower, at some pace, as this stimulated and heightened the senses. Certainly Owen's senses were stimulated. In a letter to his mother in early July, Owen states that he wrote an essay for Brock about the Outlook Tower visit. It resulted in Owen writing two pieces which, although not of the style and power he later developed in Edinburgh, were formative in starting his prolific period of writing in Edinburgh. Geddes and Brock's ergotherapy ideas stimulated body and mind. During his time in Edinburgh we see Owen physically active and with a focused mind. His writing developed from the flowery juvenilia of his younger years and early war days, to the powerful poetry that we know today.

DR ARTHUR JOHN BROCK

Brock's initial university studies under Samuel Henry Butcher led to his graduation from the University of Edinburgh's faculty of arts in 1894. He wanted to become an artist. However, his father was less keen, and Brock enrolled in the medical school at the University of Edinburgh. Spending time in Vienna and Berlin, Brock then returned to Edinburgh and qualified MBChB in 1901 before spending the end of 1901 and start of 1902 in Vienna. Brock took an international outlook and connected with international intellects, including Patrick Geddes.

However, in 1915 Brock joined the Royal Army Medical Corps as a temporary captain. To gather information, the Scottish Medical Emergency Services Committee sent out forms to all medical practitioners across Scotland, between December 1915 and 1919. Brock's form was duly completed and returned and listed his address as 24 Braid Crescent,⁵ where he lived after Kirkliston and from where he travelled to his work at Edinburgh New Town Dispensary at 17 East Thistle Street. Brock had gained experience as a GP at Woodburn Sanatorium for Consumptives; as medical officer for United Parishes of Killean and Kilchenzie (c 1903–4); as resident medical officer at the Convalescent House at the Royal Infirmary in Edinburgh

(October 1903–March 1904); as Assistant House Physician at the Leith Hospital (before 1905); and also as Clinical Assistant at the Outpatient Department back at the Edinburgh Royal Infirmary (1904–6).⁶

Brock's wartime service included service on a hospital ship to India before being sent to the front lines in France. In 1916 he returned home when he was sent to the newly created Craiglockhart War Hospital. Under the command of Major Bryce, Dr Brock joined Dr W H R Rivers and an American doctor, Major Ruggles, as a medical officer. Rivers' work was based on cures through speaking, almost akin to the counselling approaches of today. However, Brock's approach was laid out in a letter to Geddes on 20 August 1910, many years before, when he wrote at the top of the page in big capital letters 'ERGOTHERAPY' - this was the start of Brock's 'therapy by work' approach, which he pioneered. It was the foundations for later thinking in what we now call Occupational Therapy. Brock believed that cures were to be found in activity and work.7

It was a sea change in medical-military thinking for the time. Previous inhumane approaches were strikingly portrayed in the historical character of the Canadian doctor, Lewis Yelland, in Barker's Regeneration (1992) and the subsequent film (1997). The War Office, initially influenced by the work of the Aberdeen doctor, John Collie, believed that 'shell-shock' victims were malingerers.⁸ Collie had formed his views having worked on many legal cases of trauma and witnessing trauma among the expanding railways. 'Railway spine' as Collie called it, was an early day compensation scam. The same poor consideration of scammers, malingerers and dodgers could and was applied to the soldiers whom authorities thought were 'swinging the lead'.9 However all of that changed in the minds of authorities around 1916 as the number of troops coming back to Britain presenting with 'shell-shock' increased. Worse still, these were not just frontline soldiers, but now the officer class too. The War Office had to act, and set up two reception hospitals and six treatment hospitals across the UK for officers suffering from 'shell-shock'.

THE BULMANS AND THE NEWBOULTS

Owen felt at home in Edinburgh and, when the time came for him to leave Craiglockhart, he was pained to be 'rooted up from this pleasant Region'.¹⁰ This was in part due to the warm welcome he was given there. 'Aunt Nellie' Bulman had been Owen's mother's favourite governess at Owen's birthplace: Plas Wilmot, Oswestry. Nellie Bulman now lived at Pringle Bank House in Kelso, where the Owen family had holidayed in July 1912.

On Owen's arrival in Edinburgh in the summer of 1917, Mrs Bulman immediately sent a friend, Miss Henderson, to Craiglockhart War Hospital with strawberries and cream for him. Owen recorded his appreciation of this, although he found her Scottish accent a little challenging.¹¹

In Leith too, Owen had Edinburgh folk looking out for him. The Newboult family lived at Summerside Place and were friends of both the Bulman and Owen families. Owen's mother, Susan, stayed with them in July when she visited her son in the war hospital. Owen's own visits to the Leith family saw the Newboults' son, Arthur, take to the military visitor. Owen would have been wearing uniform with the addition of 'hospital blues' marking out his convalescent status. Owen was also taken by this Edinburgh boy, writing 'the figure of the Caliban at Somerside Place [sic] affects my imagination even more than the dainty Ariel'.¹²

Owen wrote two poems to Arthur Newboult, 'Sonnet to a Child' and 'Winter Song'. The 'Sonnet' was written on 18 October 1917 with 'Winter Song' possibly thereafter. While they are perhaps not on the topic, nor of the power, of his anti-war poetry, they are all part of his evolution and poetic development.

FRANK NICHOLSON

Frank Carr Nicholson had been educated at Aberdeen and Cambridge. On graduating he took a post at the University of Aberdeen library before moving to the Royal College of Physicians of Edinburgh. From there he moved to the University of Edinburgh as librarian in 1910, succeeding Scots poet Alexander Anderson. Nicholson was to prove influential to Owen. He helped Owen with learning German, continuing Owen's international education. Owen had been taking German classes at the Berlitz School in Edinburgh, which gave him a foundation in the language before he got Nicholson's help. Moreover, as we will see later, Owen discussed poetic style with this Edinburgh figure, as the developing poet adopted a pararhyme approach.

We learn about Nicholson's interactions with Owen from a short three-page memoir he gave Edmund Blunden for his 1931 edition of Owen's poems, which is appended to the publication. In it, Nicholson states that he first met Owen in the autumn of 1917 at Captain and Mrs Gray's house (see below). As much as this paper suggests Nicholson and 'the Edinburgh set' influenced Owen, Nicholson also comments on Owen's appeal: 'I was conscious of that immediate attraction which his presence seems to have exercised on a great many people ... the youth and comeliness were so strongly expressive of the personality behind them.'¹³

Nicholson noted that Owen already had a good sense of the pity of war and that Germans were also 'sufferers' in the Great War. Owen wanted to prepare himself for future opportunities for intercourse with those deemed officially as 'the enemy' but suffering similarly through war. They had planned several afternoon lessons, but Owen's November departure from Edinburgh cut short their planned course after only a few sessions. Nicholson did, however, comment on Owen's 'literary aptitude', that he was 'a delightful pupil', and on Owen's interest in literature, where he had found a medium to express himself.14 Owen's lessons with Nicholson added to his internationalist outlook and furthered his appreciation of the common humanity of man.

They built a strong bond. Owen and Nicholson went to an Edinburgh café and Owen shared a sense of the true horrors of war with his new teacher. Over afternoon tea, Owen did not share full details; but indicated what was in his thoughts and his desire for the outside world to make sense of them. Owen, on one occasion, almost shared battlefield photographs with Nicholson, however, on considering the horrific content, decided it would not be *bon ton*.¹⁵ The collection included images of soldiers' mutilations, wounds and surgical operations.

THE ST BERNARD'S CRESCENT ARTISTIC SET

As well as meeting with academics Owen also met with Edinburgh's artistic class. Mrs Maidie (Mary)Gray (née Scott) and her husband, Leonard Gray, a Royal Scots Captain who managed a family-owned foundry, now a munitions factory, lived at St Bernard's Crescent, a veritable hive of artistic and bohemian activity in Edinburgh at that time. Mrs Maria Steinthal (née Zimmerman) was a Yorkshire-born sculptress with German ancestors, and her husband Francis (Eric) Steinthal, a history honoursman from Oxford University, lived at 21 St Bernard's Crescent. The artist Henry John Lintott lived on the same street.

Mrs Gray was one of the Edinburgh women who helped Dr Brock in his work. That is, the Edinburgh women who helped Dr Brock as a voluntary duty, in supporting the recovery of Craiglockhart War Hospital patients as well as other activities for civic good. They would meet with patients and, for those able to, would engage them in life outwith the hospital and its grounds.

Mrs Gray gave Edmund Blunden an account of Owen to help with Blunden's 1931 memoir on Owen and collected poems being published. In it, Gray stated that 'the bond which drew us together was an intense pity for suffering humanity – a need to alleviate it, wherever possible, and an inability to shirk the sharing of it, even when it seemed useless'.¹⁶

Owen liked this artistic and intellectual community. Before Owen left Edinburgh on being discharged from Craiglockhart, he would spend a few days with the Grays and Steinthals back at St Bernard's Crescent. When Owen returned to Edinburgh briefly in December, he saw them again, dining with them on the Friday evening in December.¹⁷

Again we can see the potential for artistic influences on the aspiring and developing poet. The influence of the Grays carried on to Owen's next destinations, for in Ripon they were able to introduce him to a great friend of theirs. Owen's network expanded as a result of Edinburgh's cultured class, just as his cultural horizons were also stimulated.

A disappointing addendum to Owen's connections is the fact that in October 1917 Maria Steinthal made a portrait of Wilfred Owen. It was outlined in charcoal before being completed in oils. Sadly Owen's mother destroyed it after the war, not liking the image of her son. It, along with a play Owen wrote while in Edinburgh, are sad losses to our records of his time in Scotland.

HENRY JOHN LINTOTT

Owen first came across Lintott when fellow patient Charles Mayes introduced Owen to some other 'modern' people¹⁸ who also lived on St Bernard's Crescent. Owen had been impressed by the houses there, especially the Grays' and Steinthals', which he commented on. They had a painting by Lintott in their house, which most impressed Owen, along with their carpetless floor, white walls, grand piano and Empress sofa. However, the work that was really to impress Owen was in what he called the Edinburgh Gallery.

Lintott's painting, *Avatar* (1916), was displayed in the Royal Scottish Academy and inspired Owen greatly with its vision of a dead soldier being carried to heaven by angels.¹⁹ Again, Owen visited Lintott and was taken by him, describing him as 'an excellent gentleman'.²⁰ Owen returned for a second visit and commented on Lintott's lack of confidence. However, Mrs Lintott's pride for her husband was well noted, as was her beauty.²¹ However, it is the beauty of Lintott's painting which was most striking, for this image of four angels carrying one of 'The Fallen' to heaven may have helped sharpen Owen's thinking on the pity of war.

MISS AND MISS WYER

The Misses Wyer were also supporters of Dr Brock's work. Again, they socialised with the officers from the hospital, including Owen, and provided support to Brock, where possible, in his ergotherapy mission and various other civic endeavours across Edinburgh. In September, the unmarried sisters invited Owen to lunch at their 'palatial home',22 after which they visited the gardens together. These appear to be the gardens Geddes founded as part of his work with 'open spaces' in Edinburgh. When war broke out, Miss Wyer, took over from Dr Brock as Chair of the Open Spaces Committee at the Outlook Tower. Through the work of this committee, land between the tenements and the slums was cultivated into gardens and open spaces for play and enjoyment. Owen proclaimed that 'Dr Brock is trying to get me in touch with Edinburgh's submerged tenth'. He went on to suggest it would never work when he was in uniform, but that he could not tell Brock that.²³ Constance Wyer would later go on to be Secretary to the Outlook Tower. Through the spirit of Geddesian environmentalism, Owen would be taken, despite his uniform, to various Edinburgh places to aide his recovery.

Owen had tea with the other Miss Wyer and another lady. Their conversations stretched far and wide. Owen said Miss Wyer 'has travelled far and wide over the continents and literatures'.²⁴ The other woman who joined them was, according to Owen, 'intellectual, witty and vigorous: told some good stories and ate a huge tea'.²⁵ This was all part of Owen's cultural awakening, and he proclaimed 'the touches of what I can only call "kultur" in its universal sense, not English, French or German but universal, and the discovery of my own - almost secret - views on such things as culture, state craft, ethic etc etc, in these strange beings and places were enough to make the day memorable in itself'.26 Owen met Miss Wyer again in mid-October, lunching with her and an educated lady friend of hers. 'Miss Wyer(?)' appeared in Owen's list to receive a copy of his poems, however with a question mark in brackets after it.²⁷ Was he unsure if she should get a copy or unsure which one? Sadly, we are unable to answer this.

FOLK: CONCLUSION

The more pressing question is the significance of these figures. One might say that Owen had met 'significant' figures before. He had met with and corresponded with the poet Laurent Tailhade several times around the time of the outbreak of the war, he had shaken hands with the writer Hilaire Belloc, and he had a friend, Bizardel, who was in the Cabinet of the Prefect of Bordeaux as well as the son of a judge. These were notable figures for Owen, the son of a railway worker, to be mingling with, and he knew it. Nevertheless, none of these people had inspired or supported Owen to write poetry that would go on to be published, although he did share lines he had written with close family and friends via notebooks and letters. During the early phases of the war he had met more people, but it was not until he was admitted to Craiglockhart in Edinburgh that the powerful poems first came and, for the first time, could be published.

PLACES

Owen visited many places when in Edinburgh. Farther afield, he also visited Milnathort with Sassoon, but mainly kept himself to the city. Some of Owen's visited spots were functional venues for social meetings: The North British Station Hotel and the Caledonian Hotel. We know he visited the galleries and viewed Avatar. There is also a copy of the Royal Scottish Museum Guide to the Collection of Egyptian Antiquities in Owen's personal book collection, now stored at Oxford University. Owen had put his initials on this and 'August 1917', and it now sits as part of his preserved library.28 Owen never wrote about the museum visit; however, there were some places that stand out for the significance they play in Owen's Edinburgh enlightenment, either directly or for the important role they play in the formation of some of his key poems.

CRAIGLOCKHART WAR HOSPITAL

Owen's war-poet friend and fellow patient, Siegfried Sassoon, described the scene which Owen would have found when he arrived at Craiglockhart War Hospital on Tuesday 26 June 1917.

It would be an exaggeration if I were to describe Slateford [Sassoon referred to Craiglockhart as Slateford War Hospital in *Sherston's Progress*] as a depressing place by day-light. The doctors did everything possible to counteract gloom, and the wretched faces were outnumbered by those who were emerging from their nervous disorders. But the War Office had wasted no money on interior decoration; consequently the place had the melancholy atmosphere of a decaying hydro, redeemed only by its healthy situation and pleasant view of the Pentland Hills.²⁹

However, despite this dreich description, there is no doubt that Craiglockhart War Hospital influenced Owen and his poetry, not least the treatment he received there and the writing opportunities he was given. Some of Owen's writing, particularly his letter writing, was undertaken in the evenings and into the night at Craiglockhart, perhaps to escape the nightmares associated with shell-shock.

Owen's first poems written in Edinburgh, 'The Ballad of Lady Yollande' and 'The Wrestlers', are lengthy and in the style of Sir Walter Scott. The length and tone of 'The Ballad' is quite different to some of his war work from before late 1917; for example, 'The Ballad' has 33 stanzas in it compared to the two-stanza poem 'A Sonnet: On Seeing a Piece of Our Artillery'. The shorter sonnet became a norm for Owen, but on arriving at Craiglockhart he was experimenting with a longer 'Scottish' style poem. Looking at Owen's library of books, we can see that Owen deepened his interest in Scott in 1912 during his first visit to Scotland. Owen saw Scott's work at the British Museum in 1911, although he commented on his handwriting as being 'absolutely illegible'.³⁰ Owen perhaps found Scott more accessible when a year later he walked the battlefield of Flodden with a copy of Scott's Marmion: A Tale of Flodden Field.31 This interest in and influence of Scott seem to be reawakened in his first writing while at Craiglockhart. Although these early Edinburgh-written poems are not the ones for which Owen is later remembered, they are important as his style transitions from his early juvenilia to something more powerful and popular. These initial Edinburgh poems were long in lines but light in impact, similar in the approach to his poems before he arrived in Edinburgh. That was to change while he was in

Craiglockhart and moreover in Edinburgh itself, for Brock's treatment plan saw patients out of the hospital as much as possible and engaged in meaningful pursuits. For Owen, this was writing and refinement of his prose. Taking Sassoon's advice, he was going to 'sweat [his] guts out' writing.³²

PENTLAND HILLS

The Pentland Hills supply Edinburgh with its water supply. Furthermore, the rolling hill ranges encircling the south-west of the city have also supplied inspiration and energy to prolific writers whose works are still referred to, respected and revered to this very day.

The Pentland Hills have many key links to the rich history of Scottish literature. From folklore to famous figures, the hills have a tremendous history. Allan Ramsay set The Gentle Shepherd at Newhall; James Thomson lived in a small cottage at Mid-Kinleith; Sir Walter Scott regularly walked in the hills, commenting 'I think I never saw anything more beautiful than the ridge of Carnethy against a clear frost sky'; Henry Cockburn lived at Bonaly Tower and took enlightenment figures for walks along the broken hill ranges of the Pentlands. Best known of all literary connections is, of course, Robert Louis Stevenson, who lived with his parents at Swanston. The Pentlands are believed to have influenced his writings. At the time of his death in Samoa, he wrote of three favourite summits of the Pentland Hills: 'The tropics vanish: and meseems that I - from Halkerside, from topmost Allermuir, or steep Caerketton - dreaming gaze again.'33

Owen also frequently walked in these hills during his time in convalescence at Craiglockhart War Hospital. His room at Craiglockhart had a northerly view but he would have been able to see the hills from the hospital grounds. However, it was walking in the hills that helped to stimulate his recovery from the horrors of war. The first planned excursion to the hills, on 3 August 1917, was cancelled due to rain. This, however, allowed Owen to finish off his work on the Hospital magazine, *The Hydra*, which he edited. It is through that magazine that we find out more about Owen's future expeditions to the Pentlands.

Siegfried Sassoon referred to the hills in a letter, saying 'the Pentland Hills are glorious. I leap on their ridges like a young ram'.³⁴ We will recall that in describing Craiglockhart so dismally, Sassoon noted its location and the surrounding Pentland Hills as being one of the only redeeming features.

The Pentland Hills excursion of Friday 13 August 1917 is well documented. Sassoon would not attend these group gatherings; however, Owen, along with his doctor, Captain Brock, and five other members of the Field Club and the 19-year-old son of another patient, Captain Mackenzie, took the train from Slateford to Balerno to explore the hills sloping gently around the south-west of the city.

Owen wrote in *The Hydra*:

The route lay by Threipmuir Reservoir, Bavelaw Castle (at which point there were two desertions), then via the Green Cleuch, and round the flank of the Black Hill to Loganlee Waterfall: this little cascade comes down very prettily in a small amphitheatre formed by horizontal layers of old red sandstone and conglomerate. Then round we swung into 'Habbies How', and soon were discussing scones and jam and fresh eggs in the shepherd's cottage at the head of the reservoir. The homeward stretch by Glencorse Reservoir, and then over the hill to Bonaly and Colinton, was done at a good pace, as we had no late passes and could not face the C.O.'s wrath. Two wanderers from Shropshire saw no small resemblance between the Pentlands and the Longmynd range, on the Welsh border.35

Owen went on to write 'possibly the prettiest view of all (and one within an hour's walking distance of the hospital) is that from the hill path looking down on to the Glencorse Reservoir, where it lies amid a ring of trees and encircled by the steep grassy hills'.³⁶

Owen's appreciation of the hills is sure to have extended from views to the plants along his walks. In his letters, he wrote about the walk, and stated that he had held his own on the topic of water plants. Earlier he had given a paper, republished in *The Hydra*, entitled, 'Do Plants Think?'. Others privy to the horticultural exchange on this trip included Mr Chase, Mr Quayle, 'a Shropshire man', Captain Mackenzie, Mackenzie's son (who Owen stated 'is learned in nothing!') and a padre. Owen described it as 'a unique walk' and that, 'between us we manage to observe and philosophize the country to about half the extent that say Belloc would have done, had he taken the walk'.³⁷

It is clear that Owen was finding the treatment, and moreover, the education, provided by Craiglockhart and the Pentland expeditions a useful experience. He stated after this walk, 'it is very kind of the army to provide this free-and-easy Oxford for me',³⁸ showing the significance of the environs to him.

Despite not wanting to return late from this Pentland expedition, it appears the walkers did indeed arrive back 15 minutes late for dinner, and Owen noted in letters how tired they all were from the expedition. The physical and intellectual exertion did not stop there, as the returning patients had a full schedule of activities aimed at recalibrating them with 'normal' life.

Owen's connections with the Pentlands, and also Robert Louis Stevenson, were to come together one last time before Owen left Craiglockhart. On Sunday 21 October, a group of boys from his class at Tynecastle High School had gone to church in the morning before joining Owen. Owen had not joined them in praise, stating 'I am not ordained as a listener in the temple of life'. However, they paid homage to Stevenson following their afternoon assembly at Braid Hills Tram Terminus. Owen had been teaching Stevenson's novels as part of his work at the local school, Tynecastle High School, where he taught English Literature classes as part of his recovery, and in particular St Ives. Owen wanted to expose the students to Stevenson's strong links with the Pentland Hills with an expedition. This gathering must have been a strange site, as Owen acknowledged, in a letter to his mother.

People saw a married lady, an obviously unmarried young man in a reckless soft-cap, a well-dressed boy with violet eyes and tie (wonder where his mother learnt that?), and an ill-dressed thin boy, with an intellect behind his parchment forehead: a far little knave apparently with a large apple stowed under each cheek in case of emergency; a tall awkward boy, very nervous of himself.³⁹

While their gathering was ungainly, their purpose was clear. Owen states, 'what Spirit drove us together? The Spirit of Stevenson it was; and he was with us at his gayest of all time'.⁴⁰

The weather on this trip was the changeable standard many who explore the Pentlands will know only too well, with winds and the last of the October sun. In that sun the group 'sang songs, and told tales, every now and then leaping about and prancing for joy'. Owen's approach to learning about Stevenson had taken a far more experiential and active approach than current thinking would imagine possible for the pedagogical approaches of the time. However, it was clear that the expedition's dominie was driven to bring Stevenson alive, just as the learners were keen to give up their Sunday to engage in further study and outdoor learning.

The trip did not return until later that day and did not reach Colinton until darkness. Here the group stopped for tea before taking the road back into Edinburgh in darkness. Even once in the built-up area Owen noted the group continued with, 'songs and dance, whistle and holloing [sic]'. Owen noted:

Until the meteors showed in heaven and we fell calm under the winter stars, and some of us saw the pale pathway of the Spirits for the first time. And seeing it so far above us, and feeling that good road so firm beneath us, we worshipped God in our hearts and knew that we loved one another as not men love for long.

That was my way of spending Sunday.41

This was Owen's last recorded trip to the Pentlands. However, immersing himself in the Pentlands gave him space to think, reflect on Field Club lecturers and articles on plants and botany. The Pentland Hills linked Owen's thinking and inspiration as they had for Stevenson before him.

TYNECASTLE HIGH SCHOOL

In the world of education, it is often said that the best form of learning is teaching. As we have seen, Owen taught the works of R L Stevenson as part of his English Literature classes at Tynecastle School. Owen's first trip to the school was described by him as 'a great time'.⁴² He taught 39 'intelligently attentive' boys. One boy in particular stood out for Owen. A pupil poet, described by Owen as 'a wizened little pinchface, about two feet high',⁴³ had written a poem in the school magazine:

Mr Seaton bought a motor car, And had it painted yellow. In goggles and a big fur coat, He looked a handsome fellow.⁴⁴

Owen was struck by the boy, by his poetry and by the fact the boys had got hold of the 'international idea' in their imaginations. However, it was more powerful poetry that was to come out of his connections and teaching at Tynecastle High School. For following his first lesson there on 25 September 1917, Owen then returned to Craiglockhart for his Medical Board. It was a board meeting that ordered Owen to be kept at the hospital for longer. Between teaching at the school and going to the medical board, Owen had time to write a draft of 'Anthem for Doomed Youth'. According to Owen, Sassoon suggested the title which saw the poem take the name we all know today.45 The poem was drafted by Owen both with the title 'Anthem for Doomed Youth' and 'Anthem for Dead Youth'. We also see 'Anthem to Dead Youth' considered by Owen in his various drafts of this epic poem. In 2010, a connection between the school and its influence on 'Anthem for Doomed Youth' was suggested.⁴⁶ While Owen had written about children and boys before, it may be that his work with pupils at the school directly influenced the poem, which includes explicit references to children and youth:

What candles may be held to speed them all? Not in the hands of boys but in their eyes Shall shine the holy glimmers of goodbyes. The pallor of girls' brows shall be their pall.⁴⁷

BABERTON GOLF CLUB, JUNIPER GREEN

Two more of Owen's most famous poems also have strong Edinburgh links. It has long been known that Owen, Graves and Sassoon met while they were in Edinburgh. Owen mentions it in his letters and many have written about an Edinburgh meeting since, but the specific venue was something of a mystery. Hibberd's (2003) suggestion of Baberton Golf Club in his new biography of Owen was unconfirmed and uncorroborated.48 This claim was neither cited nor referenced, and Hibberd in fact began to lose confidence in the venue he had stated.⁴⁹ In between all of this, Mortonhall Golf Club had thought they had hosted the famous war poets meeting and this was written into their centenary history.⁵⁰ They had even made a plaque to commemorate the meeting of the three war poets at their club. However, over a decade of research revealed that Baberton Golf Club in Juniper Green can now assert that it hosted the powerful literary meeting of Wilfred Owen, Siegfried Sassoon and Robert Graves.

Research to confirm the venue included many visits to archives in London, Oxford and America, looking for references or clues relating to this meeting as part of wider research into Owen's Edinburgh. On a number of occasions, the log books at Baberton Golf Club have also been consulted by this author. Sadly there is only mention of officers playing at Baberton generally, but no specific visitor 'sign in' records. Indeed, the main focus on committee meetings seemed to be around greens being used for keeping Britain fed and moreover the cost and supplies of whisky for members. Searches from Baberton to Oxford to London to America were therefore to no avail in finding the venue of this historic meeting.

The breakthrough came during a research trip to the University of Texas archives in Austin. This led to a series of enquiries which eventually led back to the United States, this time to Southern Illinois University. Here, a letter from Sassoon to Graves asked if Graves could meet at Baberton Golf Club as Sassoon had a game of golf to play in the morning.⁵¹

This meeting of arguably the greatest war poets of the First World War happened only once. But clearly Owen made an impact on Graves, for he was invited to his wedding to Nancy Nicholson the following January. However, just as Owen made an impact on Graves, Graves' impact on Owen was to become important. As a result of meeting with Graves, Owen started to mingle with the social and literary set of the day, thus inadvertently helping to secure the promotion of his poetry posthumously.

More importantly, the discussion between the three may also have been profoundly inspiring. Owen's biographers, Stallworthy (1974)and Hibberd (2003), are proponents that the friendship fostered with Sassoon at Craiglockhart accelerated Owen's poetic development.52 But this meeting at Baberton brought together three young poets deeply affected by their shared experience of war. The timing of 'Dulce et Decorum Est', Owen's shocking poem about a gas attack, is not without significance. The 24-year-old officer wrote a draft of it just before the meeting and then a cleaner draft two days after the Baberton meeting. Owen had certainly taken his poem, 'Disabled', along to the meeting.53 This was certainly discussed, and given the timing, it is probable that 'Dulce et Decorum Est' was also on the agenda at Baberton that day, as the men chatted far from the front lines. 'Dulce et Decorum Est' is perhaps one of Owen's greatest works, and it was formed around the time of the meeting of the war poets at Baberton. 'Dulce Et Decorum Est' gives a powerful insight to a gas attack, while 'Disabled' reflects the plight of a wounded, disabled soldier back at home in his wheelchair.

There are many parts of this poem which reflect Owen's stay in Edinburgh, not least the fact it was discussed when he was at Baberton Golf Club. The subject of the poem could have been any of the Craiglockhart patients or other injured soldiers whom he saw in Edinburgh, after all, the soldier is 'kilted'. The football references are also interesting given that Owen never expressed any interest in football in his letters before his time in Edinburgh. The poem, 'Disabled', makes an explicit reference to football:

One time he liked a blood-smear down his leg, After the matches, carried shoulder-high. It was after football, when he'd drunk a peg, He thought he'd better join. – He wonders why.⁵⁴

It seems Owen did not play football, although he did referee one army match after his time in Edinburgh. However, it may have been working at Tynecastle School, next to Heart of Midlothian FC's ground, Tynecastle Park, where he began to think about football, possibly even seeing supporters there and around Edinburgh. Hearts, albeit depleted of their strong first team players by recruitment, still managed 34 matches in the 1917/18 season.⁵⁵

Finding the place of this historic meeting where 'Disabled' was discussed adds another piece of information to our knowledge of the war poets' Scottish enlightenment and to the home front history of the conflict. It also adds to the richness of Edinburgh's literary heritage, to know that some of the most vivid and excruciating poems of the First World War were further formed when three young officers met in the genteel confines of an Edinburgh golf club.

THE CLOSES AND SLUMS OF EDINBURGH

Reading the above we may believe that Owen was only mixing with the high and civic society of Edinburgh - arriving and breakfasting at the Balmoral Hotel, socialising at the Caledonian Hotel, and meeting at a golf club. However, Owen saw all aspects of Edinburgh life. Owen talked with crowds in the closes and was invited into elite circles with the bourgeoisie social set of the day. Dr Brock had a group of women who supported his work in engaging the officer patients in meaningful Edinburgh activity. Some of that activity linked to his own work with Geddes, Outlook Tower and supporting more deprived aspects of Edinburgh society. Slum Gardens were one feature of Geddes' work and Owen was taken to see them. He spent some time wandering the closes of Edinburgh and this not only gave him a broad perspective of Edinburgh but these streets also linked directly to his poetry. A lesser-known poem Owen wrote in Scarborough, has a strong Edinburgh connection: 'Who is the God of Canongate?'. Furthermore, his letters show his interest in the fortunes of a boy of the slums who had his leg impaled on a fence and also an Italian Opera singer who now lived in the Edinburgh slums, having fallen on hard times.⁵⁶ This is something Mary Gray comments on, with Owen having much interest

in the Italian street singer who had only one eye. Gray commented 'his courage, cheerfulness, and philosophy drew Wilfred to him at once'.⁵⁷

PRINCES STREET

Another piece of Edinburgh poetry which is lesser known is 'Six O'Clock in Princes Street'. Owen arrived in Edinburgh on 26 June 1917 and would have walked the length of Edinburgh's main thoroughfare, Princes Street, to the Caledonian Hotel from where he got a taxi to Craiglockhart War Hospital. The literary connections are not lost on us as he would have walked past the imposing Sir Walter Scott monument. As suggested earlier, Scott influenced Owen's first poetic attempts while he was in Edinburgh. Owen was to return to Princes Street again during his time in Edinburgh.

In his 8 August 1917 letter to his mother Owen noted

At present I am a sick man in hospital by night; a poet for quarter of an hour after breakfast; I am whatever and whoever I see whilst going down to Edinburgh on the tram; greenkeeper, policeman, shopping lady, errand boy, paper-boy, blind man, crippled Tommy, bank clerk, carter, all of these in half an hour; next a German student in earnest; then I either peer over bookstalls in back-streets, or do a bit of a dash down Princes Street, accordingly I have taken weak tea or strong coffee for breakfast.⁵⁸

In a letter on 12 September 1917, he noted to his mother that he was on the famous street purchasing gifts for fellow patients. 'We had great fun in Princes St. buying a laurel wreath for Mayes for presentation after the play.'⁵⁹

During his time at Tynecastle School teaching *St Ives*, Princes Street would again have featured in his thinking. Seeing Princes Street in print and in person led to Owen writing a poem specifically about the street and people he witnessed there. People, place and his work were again coming together:

In twos and threes, they have not far to roam, Crowds that thread eastward, gay of eyes; Those seek no further than their quiet home, Wives, walking westward, slow and wise. Neither should I go fooling over clouds, Following gleams unsafe, untrue, And tiring after beauty through star-crowds, Dared I go side by side with you;

Or be you in the gutter where you stand, Pale rain-flawed phantom of the place, With news of all the nations in your hand, And all their sorrows in your face.⁶⁰

There is a stark contrast between those shoppers on Princes Street returning to their 'quiet' homes contrasted against the ghostly, pale news boy standing in the gutter with news of the continued international crisis of war. Owen, and his experiences, set him apart from this façade of normal life ongoing along Edinburgh's main street. Furthermore, the contrast of the sociable 'twos and threes' set against the singular figure of the boy is also striking. Owen himself was lonely on one level, but Edinburgh had also given him a set of friends and supporters around him. Those supporters both encouraged and gave him content for his poetic work.

WORK

TEACHER, EDITOR, SOLDIER, POET

Owen had been a teacher before he came to Edinburgh, but his teaching in Edinburgh was 'work' in two forms. It was work for him, but it was work to help his wellbeing. Owen will be remembered for being a soldier and a war poet. However, all aspects of work made the man. Importantly, it was also work which Brock thought would help cure Owen. A by-product of his ergotherapy approach was the powerful poetry produced in Edinburgh. Owen's role, given to him by Brock, as an editor of the hospital magazine helped Owen's recovery and again helped his writing. Working alongside fellow Craiglockhart patient and Scots war poet J B Salmond, Owen read and edited others' work as well as publishing his own writing and poems. Owen would edit six copies of the hospital magazine, The Hydra, during his convalescence at Craiglockhart. Just as people and places made Owen the poet, work was also an important part of his poetic development.

If we look closely at Owen's work, we can also connect the powerful poetic style for which he is known to Scotland. Hibberd claimed that Owen invented pararhyme, the half rhyme technique.⁶¹

This could have come from French influences, although Hibberd again noted that pararhyme itself does not seem to have been used as a regular pattern by French poets.62 It could also have come from Welsh cynghanedd poems and might have been brought to Owen through ideas from Graves at the Baberton meeting. However, in Edinburgh we see two particular times when there is a clear influence on Owen's thinking on rhyme. The first is known about and has been shared before. Owen had met with the University of Edinburgh librarian Frank Nicholson and discussed pararhyme. This developed in the poetry Owen wrote in Edinburgh. Also to add to our knowledge, Owen's personal library of books held at Oxford University is revealing, as are his notes, scribbles, underlines and markings on the books. While Professor Hazel Hutchison recently noted in Siegfried's Journal that it is very difficult to understand the impact of someone's readings,63 markings on books do give an indication as to areas of reading that have sparked thought, insight or where the reader wishes to return to a specific part of what they have read. In this regard, Owen's copy of W E Aytoun's 1903 Edinburgh After Flodden⁶⁴ gives us much insight. In it we see Owen marking the following section:

But within the Council Chamber All was silent as the grave Whilst the tempest of their sorrows Shook the bosoms of the brave.

Significantly, Owen has underlined 'grave' and 'brave'; 'within' and 'whilst'. Elsewhere he underlines 'ring' and 'King'. We can see the rhyme pattern being marked up and Owen considering patterns and use of words. This could have been marked up in 1912, when Owen visited Scotland and Flodden, or it could have been when he returned to Scotland and pararhyme started to feature powerfully in his poetry, such as in his poem 'Strange Meeting' where we see 'bestirred' and 'stars'; 'eyes' and 'bless'; 'hall' and 'Hell'.

'Strange Meeting' was written in Owen's later Craiglockhart period, if not after. Stallworthy believes it was drafted when Owen was at Scarborough or possibly Ripon between January and March 1918.65 Stallworthy does, however, note that this poem may have emerged from fragments written in November 1917, when Owen was transitioning from Edinburgh to London before going on to Scarborough.66 Hibberd (1992) suggests it was published in Ripon between 12 March and 5 June 1918. However, he also acknowledges that a fragment from early 1918 'anticipates' the coming of this poem.⁶⁷ For our purposes though, we can see how this poem - soon after Craiglockhart - contrasts to earlier poems. In 'Six O'Clock in Princes Street' we see:

Roam/home Eyes/wise Clouds/crowds Untrue/you Stand/hand Place/face

From this example, we can see not only his poetry in terms of a powerful topic, but also his pararhyme, evolved during his time in Edinburgh, and in the many poems and drafts he produced there.

Owen in Scotland, and influenced in part by what he was reading in a Scottish history book, was now starting to think about different ways of presenting poetry. The next evidence of Owen's thinking on it, beyond the output of his writing poetry, is in Nicholson's account of Owen being in Edinburgh, as part of Blunden's 1931 collection of Owen's poetry. Nicholson noted, 'he told me of his idea of substituting a play on vowels for pure rhyme, and spoke of the effects that can be obtained from this device with an engaging assurance and perhaps a touch of wilfulness, like that of a child insisting, half humorously and half defiantly, that he is in the right'.68 Nicholson himself noted that he perhaps did not give the thesis enough attention, indeed, if he fully understood it at the time. With hindsight we can see the importance of Edinburgh in Owen's work as a poet.

SCALE OF WORK

One can also give an overarching analysis on the scale of Owen's writing which was published in his lifetime. The Wilfred Owen Association website states that Owen had published four poems in his lifetime⁶⁹ and the British Library website suggests five published works before his death in 1918.70 His biographer Dominic Hibberd also said that five were published in his lifetime.71 However, further analysis of his poems written in and after his time in Edinburgh's Craiglockhart War Hospital shows that a total of six poems were published in Owen's short lifetime: 'Song of Songs' (The Hydra, Craiglockhart War Hospital Magazine, 1 September 1917); a fragment of a poem in Owen's editorial, which possibly later made up the poem 'The Dead-Beat' (part of editorial of The Hydra, 1 September 1917); 'The Next War' (The Hydra, 29 September 1917); 'Miners' (The Nation, 26 January 1918); 'Futility' (The Nation, 15 June 1918) and 'Hospital Barge' (The Nation, 15 June 1918).

The part that has been missing from previous analysis of his Edinburgh writing was the one which Owen snuck into an editorial of the Craiglockhart War Hospital magazine and which he possibly uses to later produce 'The Dead-Beat':

Who cares the Kaiser frowns imperially? The exempted shriek at Charlie Chaplain's smirk. The Mirror shows how Tommy smiles at work. And if girls sigh, they sigh ethereally, And wish the Push would get on less funereally. Old Bill enlarges on his little jokes. Punch is still grinning at the Derby blokes. And Belloc prophecies of last year, serially.⁷²

In his critique of this poem, Simcox (2001) noted 'The Dead-Beat' to be one of the earlier of Owen's 'war' poems and also one of the first to be published after the war.⁷³ As is often the case, Simcox credits the foundations and influence to Siegfried Sassoon. Linking Owen's poetry to Sassoon has become the norm, however, by looking at where Owen produced his writing, one can gain greater insight to Owen's work and 're-educate' our knowledge, understanding and appreciation of his powerful poetry. Sassoon

was certainly a poetic partner, but Brock too was a supporter and initial instigator. Meanwhile, Nicholson, a trusted friend and teacher; Lintott, an inspiration; and the Bulmans, the Newboults, the St Bernard's Crescent social set and the Misses Wyer, all social supports. Together they provided direct inspiration and also ensured Owen's mind was expanded and his condition settled, thus helping him to write with ease and authority on the horrors of war.

CONCLUSIONS

Edinburgh and its people were supremely significant to Owen as a man and as a poet. The people he met, the places he went and the work he undertook all influenced his poetic production. The influence of his time spent there can be seen, not only in the development of style but in the power and production rate of his poems. We also see his first poems published in Edinburgh.

There is a challenge in identifying exactly where Owen started, worked on and finished poems as this often happened over a long period of time as poems were drafted and redrafted. However, we can see that during his four months in Edinburgh he wrote significantly. 'I wrote six poems last week, chiefly in Edinburgh' Owen wrote to his mother on 21 October 1917. My initial attempt at establishing the scale of Owen's Edinburgh writing had noted he wrote a poem once every five days. However, since then, reviewing the evidence, I believe he wrote 36 poems over 126 days, a rate of an average of a poem written or updated every 3.5 days. By comparison, it appears he wrote, on average, a poem every five days in Ripon (1918) and one every six days in Scarborough (1918), according to my calculations. The challenge of defining exact dates is acknowledged. Nevertheless, the prolific period of poetry writing between late June and early November 1917 can be coupled with the power of the poems written in Edinburgh, now matured from his earlier attempts.

In Owen's proposed edition of poems to be published he had written a list of those who were to receive a copy. Of the 20 proposed recipients, seven of them were people who he met in Edinburgh, again evidence of how he took the town and its folk to his heart.⁷⁴ Their influence and that of Edinburgh over a four-month period cannot be overstated. Edinburgh also featured directly in some poems, such as 'Six O'Clock in Princes Street'. This is further evidence of the impact whereby Owen blended war poems with the home front he was experiencing and the city he was being treated within.

We can see from Owen's poem about Edinburgh's main thoroughfare that Owen's Edinburgh contained 'sorrows' but also many who were 'slow and wise'. That wisdom and slower, peaceful way of living, away from 'the monstrous anger of the guns', helped Owen write effectively about the 'stuttering rifles' rapid rattle' and 'haunting flares'. One hundred years on, his most powerful words, written in Edinburgh, still resonate and are read at remembrance ceremonies across the country and Commonwealth.

ACKNOWLEDGEMENTS

Sincere and grateful thanks must go to all education, arts, veterans' charities and civic organisations that helped support me in 2017 when we planned and delivered 18 public engagement events marking Owen's time in Edinburgh. Most of all, I would like to thank all the individuals who supported me as chairman of that committee. They know who they are. Owen's last letter home finished poignantly 'Of this I am certain you could not be visited by a band of friends half so fine as surround me here'. 'Wilfred Owen's Edinburgh 1917–2017' Committee formed a unique and long lasting 'band of friends'. Full details of this collaboration and its outputs can be found at: http://www.napier.ac.uk/wilfred-owen-100. (Accessed 29 April 2019.)

Most grateful thanks and appreciation go to the various libraries and librarians who have supported my research: University of Oxford Bodleian and Weston Libraries, National Library of Scotland, Edinburgh City Libraries, The War Poets Collection at Edinburgh Napier University (Craiglockhart), The British Library, University of Edinburgh Library, Strathclyde University Library, University of Texas Harry Ransom Centre, University of Illinois Morris Library. Three supporters are, however, deserving

of special mention. Elizabeth Garver at the Harry Ransom Centre, University of Texas, has become a good friend after many visits to Austin, trawling the Owen archive there. It was Elizabeth's suggestion that I read Carol Rothkopf (2012) which eventually led me to review previous 'dead end' enquiries in my research.74 This eventually led to the confirmation of Baberton Golf Club as the venue for Owen, Graves and Sassoon's 13 October 1917 meeting. The letter from Sassoon to Graves, requesting they meet at Baberton Golf Club, was hidden in the Morris Library, Southern Illinois University, Carbondale. Their Research Specialist, Aaron Michael Lisec, offered first class support and again I am proud to call him a friend. Last and by no means least, Catherine Walker MBE, Curator at the War Poets Collection at Edinburgh Napier University (Craiglockhart), is to be thanked for her friendship over many years and her support in answering my many questions. The importance of archives, archivists and librarians cannot be overstated. I am indebted to them all. They need to be protected, supported and cherished.

In cherishing the memory of the life and work of Wilfred Owen, my thanks go to both the secretary of the Wilfred Owen Association, Yvonne Morris, and Wilfred Owen trustee Dr Jane Potter for their guidance on copyright issues. My thanks also go to Wilfred Owen Association Journal editor, Meg Crane, for her input to some of my earlier articles on Owen. Her editorial feedback helped sharpen my thinking on a number of occasions. In that regard I also sincerely thank Catherine Aitken for her diligent and dedicated support in the production of this article.

It should be noted that one of my trips to the Harry Ransom Centre was part funded by the Royal Society of Edinburgh. I am grateful to the Society for its support as initial groundwork there led to later finds further highlighting the significance of Edinburgh to Owen. These resulted in the extensive public engagement and education programme of 2017.

NOTES

Owen's letters can be found at http://ww1lit. nsms.ox.ac.uk/ww1lit/collections/owen and also in Bell, J (ed.) 1985 *Wilfred Owen: Selected* *Letters*. Oxford: Oxford University Press. Where cited in the Notes the following coding has been used:

- WO Wilfred Owen
- SO Susan Owen (Wilfred Owen's mother)
- 1 Brock, A J 1918 'The re-education of the adult', *Sociological Review* 10(1): 25–40.
- 2 Geddes, P 1923 'The valley section from hills to sea', *in* Mairet, P 1957 *Pioneer of Sociology: The Life and Letters of Patrick Geddes*, 123 and fig 3. London: Lund Humphries.
- 3 Bell, J 1985 *Wilfred Owen: Selected Letters*, 268. Oxford: Oxford University Press. Letter to SO 13 August 1917.
- 4 Geddes returned from India where he had been later in 1917. However there is no reference to Owen and Geddes meeting.
- 5 After 1920, the Royal College of Physicians held the forms from the wartime period. They are still held in their library on Queen Street in Edinburgh. They can also be accessed online. Brock's online entry can be found at Scottish Medical Service Emergency Committee. smsec. rcpe.ac.uk/initiation-form/brock-arthur. Accessed 16 July 2019.
- 6 Cantor, D 2005 'Between Galen, Geddes and the Gael: Arthur Brock, Modernity and Medical Humanism in Early Twentieth-Century Scotland', *Journal of the History of Medicine and Allied Sciences* 60(1): 1–41.
- 7 The 'Ergotherapy' letter is in the University of Strathclyde Geddes collection: T-GED 9 General Correspondence 9/939. Further correspondence between Geddes and Brock can be found both in the University of Strathclyde archive and also the Patrick Geddes archives at the National Library of Scotland.
- 8 Collie, J 1913 *Malingering and Feigning Sickness*. London: Edward Arnold.
- 9 A term often used by British soldiers at the time for getting away from the front lines by claiming illness, injury or insanity. 'Blighty wounds' could of course be seen, however injuries to the mind were harder to detect, verify or cure.
- 10 WO to SO 29 October 1917 in Bell 1985: 287.
- 11 WO to SO 1 July 1917 in Bell 1985: 258.
- 12 WO to SO 2 October 1917 in Bell 1985: 281.
- 13 Nicholson, F quoted *in* Blunden, E 1931 *The Poems of Wilfred Owen*, 133. London: Chatto & Windus.

14 Ibid: 134-5.

- 15 Ibid: 133.
- 16 Blunden, E 1931 in Lewis, C D 1966 The Collected Poems of Wilfred Owen (with a Memoir by Edmund Blunden), 170. London: Chatto & Windus.
- 17 WO to SO 23 December 1917 in Bell 1985: 303.
- 18 WO to SO 2 September 1917 in Bell 1985: 273.
- 19 Ibid.
- 20 WO to SO 27 September 1917 in Bell 1985: 280.
- 21 WO to SO 27 September 1917 *in* Bell 1985: 280 and again on 18 October 1917 *in* Bell 1985: 284.
- 22 WO to SO 7 September 1917 *in* Bell 1985: 274–5.
- 23 Ibid.
- 24 Ibid.
- 25 Ibid.
- 26 Ibid.
- 27 Bell 1985: 336.
- 28 Owen's library of books is held by the English Faculty Library, the Bodleian Library, University of Oxford (although it is currently held at the Weston Library across the road). It is accessible by private, advance appointment only, and does not appear on online catalogues. A further paper is in draft by this author, looking at the significance of Owen's reading and the influences of it on his work.
- 29 Hart Davis, R (ed.) 1983 Siegfried Sassoon: Diaries 1915–1918. London: Faber & Faber.
- 30 WO to SO 17 September 1911 in Bell 1985: 24.
- 31 WO to SO 21 July 1912 *in* Bell 1985: 59 (also see note 3).
- 32 WO to Leslie Gunston 22 August 1917 *in* Bell 1985: 268.
- 33 Stevenson, R L 1896 Songs of Travel and Others Verses. London: Chatto & Windus.
- 34 Hart Davis 1983: 183 (Sassoon, S to Lady Ottoline Morrell 30 July 1917).
- 35 'Notes and News', *The Hydra* 9 (18 August 1917): 8–9. http://www2.napier.ac.uk/warpoets/ Hydraissues/Hyo09/hyo09a02.html. Accessed 27 November 2018.
- 36 Ibid.
- 37 WO to SO 13 August 1917 in Bell 1985: 267.
- 38 Ibid.
- 39 WO to SO 21 October 1917 in Bell 1985: 286.
- 40 Ibid.
- 41 Ibid.
- 42 WO to SO 25 September 1917 in Bell 1985: 279.
- 43 WO to SO 27 September 1917 in Bell 1985: 280.

- 45 WO to SO 25 September 1917 *in* Bell 1985: 279–80.
- 46 McLennan, N 2010 'A Very Special English Teacher: Wilfred Owen and the Lost Boys of Tynecastle High School', Western Front Association Journal – Stand To! 88: 34–9.
- 47 Stallworthy, J 1994 Wilfred Owen: The Complete poems and fragments: Volume 1: The poems, 12. London: Chatto & Windus and Oxford University Press.
- 48 Hibberd, D 2003 Wilfred Owen: A New Biography, 348. London: Phoenix.
- 49 Hibberd, D 2009 (pers comm).
- 50 Colledge, W G P (ed.) 1992 Mortonhall Golf Club, 1892–1992. Edinburgh: Scottish Academic Press.
- 51 Southern Illinois University, Carbondale, Special Collections Research Centre, Robert Graves papers, 1917–1962, 1/1/MSS 064, Folder 7: Siegfried Sassoon, 1916 February 1 – circa 1919, item 4, [ca. October 1917] Midlothian ALS.
- 52 Stallworthy, J 1974 *Wilfred Owen*. Oxford: Oxford University Press; Hibberd 2003.
- 53 WO to SO 14 October 1917 states that Owen showed Graves 'Disabled' *in* Bell 1985: 283.
- 54 Stallworthy 1994: 62.
- 55 'Scottish Football League 1917/18', Football and the First World War. https://www.football andthefirstworldwar.org/scottish-leaguedivision-one-1918/. Accessed 27 November 2018.
- 56 WO to SO 12 September 1917 in Bell 1985: 278.
- 57 Mary Gray *in* Blunden, E 1931 'Memoir' *in* Lewis 1966: 170.
- 58 WO to SO 8 August 1917 in Bell 1985: 265-6.
- 59 WO to SO 12 September 1917 in Bell 1985: 279.
- 60 Stallworthy 1994: 14.
- 61 Hibberd, D 1986 *Owen the Poet*, 90. Basingstoke: Macmillan.
- 62 Hibberd 2003: 138.
- 63 Hutchison, H 2016 'Review of *Reading and the First World War*, edited by Shafquat Towheed and Edmund G C King', *Siegfried's Journal*, *Journal of the Siegfried Sassoon Fellowship* 29: 22–3.
- 64 Aytoun, W E 1903 Edinburgh After Flodden. London: Blackie & Son Ltd. Owen's own copy of this is held in the Bodleian Library, University of Oxford.
- 65 Stallworthy, J 1983 Wilfred Owen: The Complete

poems and fragments: Volume 1: The poems, 149. London: Chatto & Windus and Oxford University Press.

66 Ibid.

- 67 Hibberd, D 1992: 198 Wilfred Owen: The Last Year 1917–1918. London: Constable.
- 68 Blunden, E 1955: 135 The Poems of Wilfred Owen. London: Chatto & Windus.
- 69 'Biography', The Wilfred Owen Association. http://www.wilfredowen.org.uk/wilfred-owen/ biography. Accessed 27 November 2018.
- 70 'Poems by Wilfred Owen', https://www.bl.uk/ collection-items/poems-wilfred-owen. Accessed 29 November 2017.
- 71 Hibberd 2003: 461.
- 72 The Hydra 10 (September 1917). http://www2. napier.ac.uk/warpoets/Hydraissues/Hyo10/ hyo10a01.html. Accessed 18 October 2018. This short poem is possibly used to form the basis of Owen's later poem 'The Dead-Beat' which can be read at Stallworthy 1994: 31.
- 73 Simcox, K 2001 'Poetry Critique: Deadbeat', *The Wilfred Owen Association*. http://www.wilfred owen.org.uk/poetry/deadbeat. Accessed 17 April 2019.
- 74 Edinburgh associated individuals whom Owen wanted to receive a copy of his first edition of poems published were Siegfried Sassoon*, Robert Graves*, Mrs Gray, Mrs Fullerton, Dr Sampson, Dr Brock and Miss Wyer. [*Owen met in Edinburgh albeit not from there.]
- 75 Rothkopf, C 2012 Selected Letters of Siegfried Sassoon and Edmund Blunden, 1919–1967. London: Picking & Chatto.

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⁴⁴ Ibid.

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