

Early Medieval Settlement in Upland Perthshire: Excavations at Lair, Glen Shee

2012-17

David Strachan, David Sneddon and Richard Tipping

with contributions by

Łukasz Banaszeck, Steven Black, Ewan Campbell, Ann Clarke, David Cowley,
Derek Hall, Stratford Halliday, Derek Hamilton, Catherine Johnson,
Anthony Krus, Dawn McLaren, Peter McNiven, Peter Morris,
Daniël Postma, Danny Paterson, Susan Ramsay,
Catherine Smith and Dene Wright

ARCHAEOPRESS ARCHAEOLOGY



ARCHAEOPRESS PUBLISHING LTD

Summertown Pavilion
18-24 Middle Way
Summertown
Oxford OX2 7LG

www.archaeopress.com

ISBN 978-1-78969-315-7

ISBN 978-1-78969-316-4 (e-Pdf)

© the individual authors and Archaeopress 2019

Front Cover: An oblique aerial view of the Pitcarmick buildings at Ashintully, Cnoc an Daimh, looking east (Canmore ID29451: NO 1084 6249): the earthwork remains of this 25m long building are picked out by a low bank. To the left (north) the faint outline of an earlier building is visible and both are surrounded by later cultivation remains (© Crown Copyright: HES DP226073).

Back Cover: One of the many later stone and turf buildings at Lair which share some of the characteristics of the Pitcarmick buildings, with Mount Blair in the background (D. Strachan: 2011).



This work is licensed under a Creative Commons Attribution 4.0 International License.

Printed in England by P2D

This book is available direct from Archaeopress or from our website www.archaeopress.com

Cairns and circles similar to those described are to be seen in other hills of this parish...The elevated situation and cold exposure in which these ruins lie, have preserved them from being ever disturbed by the plough, which has exposed, and probably destroyed ruins of the same kind in other places.

The Reverend Allan Stewart, 1795
(*The Statistical Account of Scotland*, Kirkmichael, Perth, Vol. 15, page 520).

Contents

List of Figures.....	v
List of Tables	viii
Acknowledgements	ix
List of Contributors.....	x
Notes	xi
1. Introduction	1
Strachan and Tipping	
1.1 Background to the project	1
1.2 North-west European turf and timber houses: an international context for the excavations at Lair	3
Daniël Postma	
Cultural connections across the North Sea	3
Elements of societal development	3
A north-west European building tradition?.....	3
1.3 The archaeological setting.....	4
Prehistoric and early medieval archaeology in the region	4
The archaeology of Glen Shee and Strathardle	7
1.4 Pollen-analytical evidence for land-use change in and around Glen Shee.....	12
1.5 Historical and political contexts	13
1.6 The Pictish language and place-names in and around Glen Shee	14
Peter McNiven	
1.7 The catchment of the Allt Corra-lairige: geology, topography, soils and climate	16
1.8 Mapping of the field remains.....	19
Łukasz Banaszek and David Cowley	
Source data and survey methodology.....	20
Land use and the (in)visibility of archaeological features.....	21
Survey results.....	22
A palimpsest on the 'high-tide' mark.....	23
1.9 Key sites in the study area.....	24
1.10 Research objectives	25
2. Results of Archaeological Fieldwork, Radiocarbon Dating, Peat-Stratigraphic and Pollen Analyses	28
Sneddon, Strachan and Tipping	
2.1 Introduction	28
2.2 Topographic and geophysical survey.....	28
Geophysics by Peter Morris	
Results: areas of burning	30
Cultivation remains.....	30
Metallic debris.....	30
2.3 Excavation.....	31
David Sneddon and Steven Black	
Linear burnt feature.....	31
Building 1	33
Building 2	37
Building 3	41
Building 3: the annexe	48
Building 3: the external platform	50
Building 4	50
Building 5	51
Building 6 and enclosures	51
Building 7 and enclosure	52
Structure 4, cairns and other structures	55

2.4 Geo-archaeological analyses	56
2.5 Radiocarbon dating	56
Anthony Krus and Derek Hamilton	
Bayesian modelling methodological approach.....	56
Samples and the models	57
Building 1	57
Building 2	59
Building 3	61
Other dated contexts	61
Bayesian models and results	62
Sensitivity analysis: an alternative Bayesian model.....	62
Conclusions.....	65
2.6 Peat-stratigraphic and pollen-analytical evidence for environmental and land-use change	66
Danny Paterson and Richard Tipping	
Introduction	66
Holocene peatland evolution on the lower slopes of Allt Corra-lairige	66
Pollen analyses from borehole A1, Basin 2	70
Methods	70
The pollen source area and its relation to the archaeological structures	70
Interpretations	70
2.7 Charcoal analysis	76
Susan Ramsay	
Introduction and methodology	76
Results	76
3. The Small Finds	78
Strachan and Sneddon	
3.1 Introduction	78
3.2 Lithics	78
Dene Wright	
Contexts	79
Primary technology.....	79
Secondary technology	79
Discussion	80
3.3 Stone tools	80
Ann Clarke	
Cobble tools and ground stones	80
Whetstones, anvil/whetstone and anvil.....	80
Rotary grinders	81
Rotary quern	82
Ground/structural slab	82
Lamp/mortar.....	83
Slab with hollow	83
Distribution	84
Comparison with other sites.....	84
3.4 A decorated stone spindle whorl	85
Catherine Johnson	
The decoration and markings.....	85
Discussion	86
Additional note on decorated spindle whorl SF33	87
Ann Clarke	
3.5 The iron objects	87
Dawn McLaren	
Introduction and methodology	87
Knives	88
Catalogue	88
Other tools	89
Catalogue	91

Security equipment	91
Catalogue	93
Household equipment	93
Catalogue	93
Fittings	93
Dress accessories	94
Catalogue	95
Miscellaneous	96
Catalogue	96
Distribution	96
Discussion	97
3.6 The vitrified material	98
Dawn McLaren	
Ferrous metal-working waste	98
Plano-convex slag cakes	98
Tapped slag	99
Unclassified iron slag	99
Hearth lining	99
Diagnostic micro-debris: hammerscale	99
Other vitrified material	99
Distribution	101
Ironworking at Lair and beyond	101
3.7 The pottery	102
Derek Hall	
Catalogue	102
Prehistoric sherds	102
Medieval sherds	103
Daub	103
Discussion	103
3.8 The glass bead	103
Ewan Campbell	
Description	103
3.9 Animal bone	104
Catherine Smith	
Introduction and methodology	104
Results	105
Discussion	106
4. Discussion	107
Strachan, Tipping and Sneddon	
4.1 Introduction	107
4.2 Archaeological and pollen-analytical evidence for later prehistoric settlement and use of the uplands	107
4.3. A Late Iron Age-early medieval settlement continuum?	108
4.4 Lair immediately prior to the construction of the Pitcarmick buildings	110
4.5 Chronology and sequence of the buildings at Lair	110
4.6 The buildings at Lair: form and function	111
Buildings 1 and 2	111
Buildings 3-5	112
Building 3	112
Buildings 4 and 5	114
Building 6	114
Buildings 7 and 8	116
4.7 The buildings at Lair: turf, stone, timber and thatch	119
Sources of turf	119
The use of stone	119
Turf wall construction	120
Wood and thatch: the superstructure	121
4.8 The buildings at Lair: spatial patterning	122

4.9 Re-visiting the morphology of Pitcarmick buildings.....	123
with Stratford Halliday	
Elongation and scale	127
Rounded ends.....	127
Bowed walls, width differentiation and sloping construction.....	127
Partially sunken interiors	128
Entrances	128
Annexes.....	128
Pitcarmick-type group.....	129
4.10 Early medieval buildings in the North Sea area	129
Daniël Postma	
Previous research on turf-walled buildings	129
Typological comparison	129
Use of space	130
Building technology	130
Concluding remarks on the international context of Pitcarmick buildings.....	131
4.11 The socio-political context and geographic patterns of Pitcarmick buildings in north-east Perthshire ...	132
with Stratford Halliday	
4.12 The rural economy at Lair AD 600-660 to AD 975-1025: palynological evidence and implications	137
4.13 The wider context of 7th century AD agrarian expansion	140
with Stratford Halliday	
4.14 The function of Pitcarmick buildings.....	143
with Daniël Postma	
4.15 The social status of 'Pitcarmick' communities	146
4.16 After the 'Pitcarmicks'	147
with a contribution from Łukasz Banaszek and David Cowley	
5. Conclusions	150
5.1 Introduction	150
5.2 Threats to the resource	150
5.3 The impact of the Glenshee Archaeology Project	150
5.4 Lessons learned.....	152
5.5 Potential for future research	152
References.....	154
Appendix A.....	171
Index	178

List of Figures

1. Introduction

Figure 1.1 The location of the site at Lair, Glen Shee, Perth and Kinross.	2
Figure 1.2 Community engagement and the outdoor classroom.	2
Figure 1.3 Selected archaeological and pollen sites mentioned in the text.	5
Figure 1.4 Pont's late 16th century map showing the crannog on Loch Beanie: '[th]e duelling of [th]e cheef man of Glen Chy and StraArdle' (Reproduced by permission of the National Library of Scotland).	7
Figure 1.5 The Early Bronze Age ring-cairn at Lair in the foreground, with glacial deposits behind and Mount Blair beyond (D. Strachan: 2013).	9
Figure 1.6 Aerial view of the multi-period site at Wester Peatshaugh (ID31021), including clearance cairns, roundhouses, Dalrulzion-type roundhouses, Pitcarmick buildings and cultivation remains (D. Strachan: 2001).	9
Figure 1.7 The extensive township at Easter Bleaton on the glen floor c. 5 km south of Lair (D. Strachan: 2007).	10
Figure 1.8 The upland township of Corra-lairig (E. Martin: 2014).	11
Figure 1.9 Pre-improvement field-systems at Glenkilrie (D. Strachan: 2007).	11
Figure 1.10 The wider region showing early medieval power-centres and the known distribution of Pitcarmick buildings.	13
Figure 1.11: Pictish and Gaelic place-names mentioned in Section 1.6 that appear on current OS maps.	17
Figure 1.12 The catchment of the Allt Corra-lairige showing the topography, bedrock and superficial geology and soils.	18
Figure 1.13: The lower catchment of the Allt Corra-lairige.	19
Figure 1.14 A low-level aerial view, looking south-east, of the setting of the excavations, showing the afforested Torr Lochaidh to the left, the splash of close-cropped grassland bordered by dry <i>Calluna</i> heath, the glacial morainic mounds that 'protect' the Allt Corra-lairige, and Glen Shee (E. Martin: 2014).	20
Figure 1.15 Orthophotograph documenting current land use and showing the extent of ALS data (© Historic Environment Scotland (Source: orthophotographs (2008) licensed to Historic Environment Scotland for PGA, through Next Perspectives™)).	21
Figure 1.16 Features mapped from aerial photographs and Airborne Laser Scanning data (© Historic Environment Scotland (Source: contour data derived from DTM (2018) © Bluesky International Limited & Getmapping Plc.)).	23
Figure 1.17 An aerial view of Lair from 1978 showing the main group of Pitcarmick buildings and related buildings beside the ring-cairn (© Crown Copyright: HES A55314).	25
Figure 1.18 One of the smaller buildings at Lair (Building 7) with associated enclosures (D. Strachan: 2011).	26
Figure 1.19 A larger building (Building 1), closest to the ring-cairn, with stones robbed from the cairn kerb and incorporated into the rounded end (D. Strachan: 2011).	26

2. Results of Archaeological Fieldwork, Radiocarbon Dating, Peat-Stratigraphic and Pollen Analyses

Figure 2.1 Topographic survey showing upstanding archaeology and positions of trenches.	29
Figure 2.2 Magnetic gradiometer survey: see Figure 2.1 for location (Peter Morris: 2014).	30
Figure 2.3 East facing section through linear burning: Trench 3 in 2012 (scale = 2 m).	31
Figure 2.4 Buildings 1 and 2 prior to excavation showing earthworks and trench plan.	32
Figure 2.5 Building 1 excavation plan.	34
Figure 2.6 Building 1: lower turf wall (C21) and location of section B-B' (Figure 2.5) in 2012 (Horizontal scale = 1 m).	35
Figure 2.7 Building 1 and 2 selected sections.	36
Figure 2.8 Building 2 excavation plan.	38
Figure 2.9 A vertical aerial photograph of the south-eastern end of Building 2 partially excavated (E. Martin: 2014).	39
Figure 2.10 Oblique view of the ring-cairn and the south-eastern end of Building 2 (E. Martin: 2014).	40
Figure 2.11 Oblique aerial view of Buildings 3-5, evaluation trenches and earthworks (E. Martin: 2015).	41
Figure 2.12 Buildings 3-5 before excavation showing earthworks and trench plan.	42
Figure 2.13 Building 3 excavation plan.	43
Figure 2.14 Building 3: the hearth C235 and stone infill C157/C166 showing gradient at north-western end in 2016 (scales = 1 m).	44
Figure 2.15 South-west facing section through Buildings 3 and 5.	45
Figure 2.16 Building 3: hearth and selected pit/post-hole sections.	46
Figure 2.17 Building 3: post-hole C169 during excavation at base of stone infill C157/C166 in 2016.	47

Figure 2.18 Building 3: entrances showing stone slab steps leading into the sunken part of the building (foreground) and the three large post-holes (C317, C319 and C321) behind in 2017 (large scales = 1 m).....	48
Figure 2.19 Building 3/4: gully and sunken floor in 2016 (horizontal scale = 1 m).....	49
Figure 2.20 Building 3 annexe during excavation in 2016.....	50
Figure 2.21: Building 6: east-facing section.....	52
Figure 2.22 Vertical view of Building 7 during excavation (K. Ward: 2017).....	53
Figure 2.23 Building 7: wall within evaluation trench and earthwork in 2014 (scales = 1 m).....	53
Figure 2.24 Building 7: curved wall at the western end in 2017 (scales = 1 m).....	54
Figure 2.25 The west facing section through the wall of Building 7.....	55
Figure 2.26 Structure 4 and nearby cairn in 2013 (scales = 1 m).....	55
Figure 2.27 Calibrated radiocarbon dates. Calibrations were calculated using the terrestrial calibration curve (IntCal13) of Reimer <i>et al.</i> (2013) and the probability method of Stuiver and Reimer (1993) with OxCal v4.3 (Bronk Ramsey 2017). Radiocarbon dates are grouped into their corresponding contexts.....	60
Figure 2.28 Results and structure of the primary Bayesian model. 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 exactly.....	63
Figure 2.29 Results and structure of the alternative Bayesian model. The brackets and keywords define the model structure. The format is as described in Figure 2.28.....	64
Figure 2.30 Estimated spans of activity from the primary and alternative models.....	65
Figure 2.31 Oblique aerial photograph looking south over the peats (dark brown) of Basin 1 in the foreground and the northern edge of Basin 2 in the background, separated by improved pasture displaying cultivation traces. Both basin peats have been heavily cut which has created fen peat around them. The position of the pollen site in the fen of Basin 2 is marked by the cross (© Crown Copyright: HES DP226321).....	67
Figure 2.32 Sediment-stratigraphic transect across the peats of Basin 2 with inferred phases of peatland development from AMS ^{14}C dating: (Phase 1) a blanket of wood peat shortly before 3372-3628 BC; (Phase 2) herb peat accumulates over wood peat until c. 1000 AD; (Phase 3) conjectured surface of the basins shortly before AD 1190-1283 with peat-cutting in the south-westerly basin; (Phase 4) formation of Cyperaceae (sedge) peat after abandonment of peat-cutting shortly before AD 1190-1283, save for a new bank cut in the surface of herb peat at the south-west.....	68
Figure 2.33 Complete percentage-based pollen diagram at borehole A1, Basin 2 with depth (mm) and with age (cal BP).....	72
Figure 2.33 continued, Complete percentage-based pollen diagram at borehole A1, Basin 2 with depth (mm) and with age (cal BP).....	73

3. The Small Finds

Figure 3.1 Flint artefacts: Cat 1, 10, 28 and 36.....	79
Figure 3.2 The faceted smoother (SF39), grinder/smoker (SF29), lamp/mortar (SF30), and whetstone (SF54)....	81
Figure 3.3 The anvil/whetstone (SF58) and whetstone (SF76).....	82
Figure 3.4 Rotary grinders SF55 (top) and SF86 (bottom).....	83
Figure 3.5 Spindle whorl (SF33): image extracted from RTI and incisions described in the text (RTI courtesy of H. Christie and S. Jeffrey of Glasgow School of Art).....	85
Figure 3.6 Selected iron objects.....	90
Figure 3.7 The barb-spring padlock (Cat 9) after conservation (© AOC Archaeology Ltd).....	92
Figure 3.8 A schematic of the barb-spring padlock and bolt.....	92
Figure 3.9 The segmented bead showing colour variation (M. Bell: 2018).....	103
Figure 3.10 The bead indicating scale.....	103

4. Discussion

Figure 4.1 The alignment of Buildings 1 and 2 with the ring-cairn and showing later cultivation remains to the south. The re-use of stone from the cairn in Building 2 may suggest re-use of the cairn or a reverential act of acknowledgement of the structure.....	109
Figure 4.2 Reconstruction of Buildings 1 and 2 and the ring-cairn (A. Braby and G. McSwan: 2014).....	112
Figure 4.3 The distribution of small finds by material in Buildings 3.....	113
Figure 4.4 Reconstruction plan of Building 3.....	113
Figure 4.5 Schematic sections across Building 3 showing a) rigid A-frame 'cab' roof option, b) the same with loft space, and c) a roof supported by lighter-weight round wood poles under tension and with loft space (C. Mitchell: 2018).....	114

Figure 4.6 Schematic longitudinal sections through Building 3 illustrating the noticeable slope of the domestic area (left) compared with the byre on the right hand side, below shows the loft space option (C. Mitchell: 2018).....	115
Figure 4.7 Artists' reconstruction of Building 3 as a byre-house over-wintering cattle (C. Mitchell: 2018).	116
Figure 4.8 The Weaver's house at the Highland Folk Museum shows how the wall footings of Building 7 may have looked; the roofs at Lair were probably lower due to their exposed location and high altitude (D. Strachan: 2013).....	117
Figure 4.9 The probable broad phasing of the visible remains at Lair: early medieval Buildings 1-2, 3-5; probably 12-13, and possibly 14 (© Historic Environment Scotland (Source: contour data derived from DTM (2018) © Bluesky International Limited & Getmapping Plc.)).....	118
Figure 4.10 Icelandic turf wall construction: herring-bone facades of <i>klambra</i> or 'clamped block', and alternate courses of <i>strengur</i> , with an earthen/turf core on a dwarf foundation wall (D. Strachan: 2013).....	120
Figure 4.11 A rounded corner from Tyrfingsstaor, Iceland, with a herring bone pattern of <i>klambra</i> blocks and a stone foundation, both interspersed with <i>strengur</i> strip turves (D. Strachan: 2013).....	121
Figure 4.12 A selection of comparative plans of unexcavated Pitcarmick-type and related buildings showing variation in scale and morphology (based on RCAHMS: 1990; Cowley: 1997 and MacGregor 2010).	125
Figure 4.13 Comparative plans of the excavated Pitcarmick-type buildings from Lair (1) and Pitcarmick (2, based on Carver et al. 2012), and 'related' buildings at Lair (3 and 4) and Bunrannoch (5, based on MacGregor 2010).	126
Figure 4.14 The numbers of Pitcarmick buildings at increasing distance (5 km units) along a straight line north-west of the Blairgowrie-Alyth axis.....	134
Figure 4.15 The distance from Pitcarmick buildings to the nearest well-drained strath terraces.	134
Figure 4.16 Graph showing (a) relative heights of Pitcarmick buildings above the nearest strath; (b) relative heights of Pitcarmick buildings ordered from lowest to highest.....	135
Figure 4.17 The distribution of known Pitcarmick buildings with soil types.....	136
Figure 4.18 Aspects of known Pitcarmick buildings.....	137
Figure 4.19 Graph showing percentages of Pitcarmick buildings in 50.0 x 50.0 m cells (defined by OS grid references on the X-axis) in the area surveyed by RCAHMS (1990) in ten arbitrarily defined equal-width bands of solar irradiance.	139
Figure 4.20 The location of pollen sites in Table 4.1 and Figure 4.21.....	141
Figure 4.21 Patterns of economic 'recession' or 'recovery' in the pollen records.	142
Figure 4.22 Stobie's map of 1783 [sheet 5SE] (Reproduced by permission of the National Library of Scotland).	148
Figure 4.23 The well-preserved stretch of military road at Lair, dating from c. 1750 (D. Strachan: 2012).....	149

List of Tables

2. Results of Archaeological Fieldwork, Radiocarbon Dating, Peat-Stratigraphic and Pollen Analyses	
Table 2.1 Radiocarbon data.....	58
Table 2.1 continued, Radiocarbon data.	59
Table 2.2 Probability matrix that event τ_1 occurred before event τ_2 in the primary model.	66
Table 2.3 Probability matrix that event τ_1 occurred before event τ_2 in the alternative model.	66
Table 2.4 AMS ^{14}C assays on peat in Basin 1.	67
Table 2.5 Sediment description of borehole A1 in Basin 2.	69
Table 2.6 AMS ^{14}C assays on peat in Basin 2.	69
Table 2.7 Size measurements and possible identification of Poaceae pollen grains with a-axes $>35\text{ }\mu\text{m}$: Key to columns: (a) depth of sample (mm); (b) length (a-axis: μm); (c) width (b-axis: μm); (d) annulus diameter (μm); (e) annulus boundary; (f) annulus: exine thickness ratio; (g) Andersen (1979) Group.....	71
Table 2.8 Charcoal identification from sample of linear burning (C14).....	77
Table 2.9 Charcoal identification from sample of lower hearth fill (C248).....	77
3. The Small Finds	
Table 3.1 Characteristics of the lithic assemblage.....	78
Table 3.2 Analysis of recovery locations by context and sub-analysed between primary and secondary technologies.....	79
Table 3.3 Stone artefacts.....	80
Table 3.4 Rotary grinders from selected Scottish medieval sites.....	83
Table 3.5 Stone artefacts from stratified Building 3 contexts.....	84
Table 3.6 The range of vitrified material recovered during excavation.....	98
Table 3.7 Distribution of vitrified and heat-affected materials across the excavated area by type and weight. The key to the abbreviations used in the table above can be found in Table 3.6.	100
4. Discussion	
Table 4.1 Pollen sites considered in Section 4.13.....	138
Table 4.1 continued, Pollen sites considered in Section 4.13.....	139

Acknowledgements

Both the excavations at Lair and the subsequent programme of post-excavation research and publication is the result of considerable input from a wide variety of individuals and organisations. The authors are indebted to them all and hereby acknowledge their contributions. The on-site archaeology team over 2012-17 included staff from Northlight Heritage, then part of York Archaeological Trust: Steve Black (site supervisor), Charlotte Francoz (survey), Clark Innes (palaeobotany) and Katy Firth, and from Perth and Kinross Heritage Trust: Sarah Malone, Sophie Nicol and Gavin Lindsay (who supervised our programme of school engagement). We are indebted to Peter Morris for geophysical survey throughout the project and to Carol Pudsey for her advice on geology. Low-level aerial photography, captured by drone, was a useful addition to our toolkit and was provided by Eddie Martin (2012-16) and Ken Ward (2017). Our attempts to carry out geoarchaeological analyses were undertaken by Paul Adderley and Dennis Dring of the University of Stirling, and by Vanessa Rees, then of the University of Aberdeen.

The excavations could not have taken place without the input of the volunteers who contributed so much each year. They came from the local community and further afield, and were joined annually by archaeology students from the Universities of Glasgow, Aberdeen, Edinburgh and the Highlands and Islands. Special thanks are due to these who attended all six seasons of excavations: Anthea and Deryck Deane, Barbara Hogarth, and Diana MacIntyre, and to those who attended in multiple years: Elspeth Reid, (the late) Tony Simpson, Juliette Mitchell, John Robb, Roy Marsden, Tom Sneddon, Ali Constable, Mike Ballantine, Isobel Morrison, Elizabeth Robertson, Katie South, Anemay Jack, Steve Ponsonby, Alison Selwa, Lauren Davidson, Mark Seaborne and Kerry Gray. The schools that participated included Kirkmichael Primary (2012-13 and 2017), Blairgowrie High (2012 and 2014), Breadalbane Academy (2016), Kettins Primary (2017) and Meigle Primary (2017): we would like to thank all those involved. Many other parts of the local community contributed to the success of the project, and our thanks in particular are extended to the landowner, David Houston, who accommodated with interest our fieldwork over six years and the Clan MacThomas Society, who made available the car park at their gathering place, Clach na Coileach, the Stone of the Cockerel. We would also like to thank Mount Blair Community Council, The Glenshee Pottery (latterly the Wee House of Glenshee), Gulabin Lodge Outdoor Centre Glenshee, and the Eco-camp Glenshee for their support and hospitality.

The excavations at Lair were funded by a number of organisations over the years. In addition to the significant contributions made by both Perth and Kinross Heritage Trust and Northlight Heritage, the main funders were The Heritage Lottery Fund (2013-14), The Gannochy Trust (2014-16), and Historic Environment Scotland (2015-17), with smaller contributions from the Cairngorms National Park (2012-13), Scottish Hydro Drumderg Community Benefit Fund (2012), the Society of Antiquaries of Scotland (2012 and 2015), The Strathmartine Trust (2017), and the Hunter Archaeological and Historical Trust (2013). This publication has been supported by Perth and Kinross Heritage Trust, The Strathmartine Trust, and has been grant-aided by Historic Environment Scotland.

Richard Tipping and Danny Paterson would like to thank David Strachan (Perth and Kinross Heritage Trust) for inviting the opportunity to work at Lair, Julia Campbell (University of Stirling) who assisted in securing funding, which was given by the Scottish Funding Council and Perth and Kinross Heritage Trust. Aden Beresford and Wishart Mitchell helped in fieldwork, and the Division of Biological and Environmental Sciences at Stirling University provided facilities and accommodated the work: Bob McCulloch is thanked for facilitating laboratory work.

In the production of this publication we would also like to thank all of the specialists who have contributed, and those who illustrated their work: Leeanne Whitelaw (line drawings of flint, stone and bead); Woody Clarke (photography of the rotary grinders); Mike Bell (bead photography); Sam O'Leary of AOC Archaeology (metal-work illustrations); Heather Christie and Stuart Jeffrey of Glasgow School of Art (scanning and RTI illustrations of the spindle whorl); and Ingrid Shearer and Peta Glew of Northlight Heritage. Special thanks to our reconstruction artists Alan Braby, Gillian McSwan and Chris Mitchell. Finally we would like to thank David Davison of Archaeopress for his patience, and the numerous colleagues who provided advice and support both on site and in the production of this publication: Martin Carver, Strat Halliday, Piers Dixon, Karen Milek, Oskar Sveinbjarnarson, Þór Hjaltalin, Bryndís Zoega and Guðný Zoega. Our special thanks go to Althea Davies (University of St Andrews) who reviewed the palynological aspects of the text, and to Strat Halliday who kindly reviewed the entire text and helped us rethink aspects of both on site interpretation and wider context.

List of Contributors

Lukasz Banaszeck, Historic Environment Scotland	Peter McNiven, University of Glasgow
Steven Black, Northlight Heritage	Peter Morris, Blairgowrie Geoscience
Ewan Campbell, University of Glasgow	Daniël Postma, Archaeo Build
Ann Clarke, freelance lithic specialist	Danny Paterson, University of Stirling
David Cowley, Historic Environment Scotland	Susan Ramsay, freelance archaeobotanical specialist
Derek Hall, freelance archaeologist and ceramic specialist	Catherine Smith, Alder Archaeology Ltd
Stratford Halliday, independent archaeological researcher	David Sneddon, Northlight Heritage
Derek Hamilton, SUERC Radiocarbon Dating Laboratory	David Strachan, Perth and Kinross Heritage Trust
Catherine Johnson, University of Glasgow	Richard Tipping, University of Stirling
Anthony Krus, SUERC Radiocarbon Dating Laboratory	Dene Wright, University of Glasgow
Dawn McLaren, AOC Archaeology Group	(As at time of writing).

Notes

Chronology, terminology and building dimensions

Throughout, and in line with the Scotland's Archaeological Periods and Ages (ScAPA) project (www.scottishheritagehub.com/content/scapa) we use the following chronological definitions: Bronze Age (2500-800 BC); Iron Age (800 BC-AD 500); early medieval (AD 500-1000); medieval (AD 1000-1600) and post-medieval (after AD 1600) as defined by the ScAPA thesaurus (<http://purl.org/heritagedata/schemes/scapa>). The Scottish Monument Type Thesaurus (<http://purl.org/heritagedata/schemes/1>) has been used throughout to describe monument types, and individual sites mentioned are identified by their Canmore ID (e.g. ID1234, see <https://canmore.org.uk/>).

All radiocarbon (^{14}C) dates mentioned in the text are calibrated (cal) unless otherwise stated.

While RCAHMS (1990) used the term 'Pitcarmick-type building', the thesaurus (above) uses 'Pitcarmick building' and so this is the term commonly adopted within. It is also used in preference to 'longhouse' because it is interpretatively neutral and makes no functional assumptions. Milek (2007: 2-3), notes two definitions of the term 'longhouse'. The first originates with Trier (1969) as cited by Hermanns-Auðardóttir (1989) and is defined as a residential building with a length-to-width ratio of at least 1:2. The second, more commonly used definition, denotes an elongated dwelling with residential space at one end and a byre at the other (cf. Crawford 1987: 145; Fenton 1982). The latter usage is sometimes ambiguous, however, and Milek, for instance, notes that 'longhouse' is commonly used to describe Viking Age houses in Iceland even though they are not, in general, byre-houses (2007: 3).

Building dimensions given in Chapters 1 and 2 relate to the field remains and are taken from the top of the bank defining the feature to the top of the opposite bank. In Chapter 4 estimated internal dimensions are given, and are based on the assumption that turf walls were around 1 m in width and that the top of the bank represents the centre of the original wall line. All should be considered approximate given the nature of collapse and degradation and, unless otherwise stated, all measurements are derived from survey and excavation and may not match dimensions cited in other publications.

Image copyright

Unless otherwise indicated all images are copyright of Perth and Kinross Heritage Trust.

Geographical terms

Sites within Perth and Kinross are accompanied by a locating place-name, and outwith are given their modern local authority area. Occasionally the historic term Perthshire is used when describing the upland zone of what is now Perth and Kinross.

1. Introduction

Strachan and Tipping

with contributions by Postma, McNiven, Banaszek and Cowley

1.1 Background to the project

Glen Shee and Strathardle are broadly north-south oriented valleys straddling the Highland Boundary Fault east of the River Tay, and share many of the heavily glaciated characteristics of the Angus Glens to their east (Figure 1.1). As early as the 1860s the hut-circles in the Strathardle hills had attracted John Stuart's excavations at Balnabroich and Ardlebank (Stuart 1866), one of the earliest attempts to explore these sorts of monuments, and the complex landscapes that surround them, anywhere in Scotland. Glen Shee, while described as 'one of the most interesting glens in the Highlands... once thickly populated and... rich in legendary and traditional lore' (Smith 1895: 96), did not see archaeological research until the 1930s, when Wallace Thorneycroft followed up Stuart's work with his excavations at the roundhouses at Dalrulzion (1933; 1946). His fieldwork and that a little later of Margaret Stewart (1962) was eventually consolidated by the Ordnance Survey in the early 1970s (Thoms and Halliday 2014: 13-15).

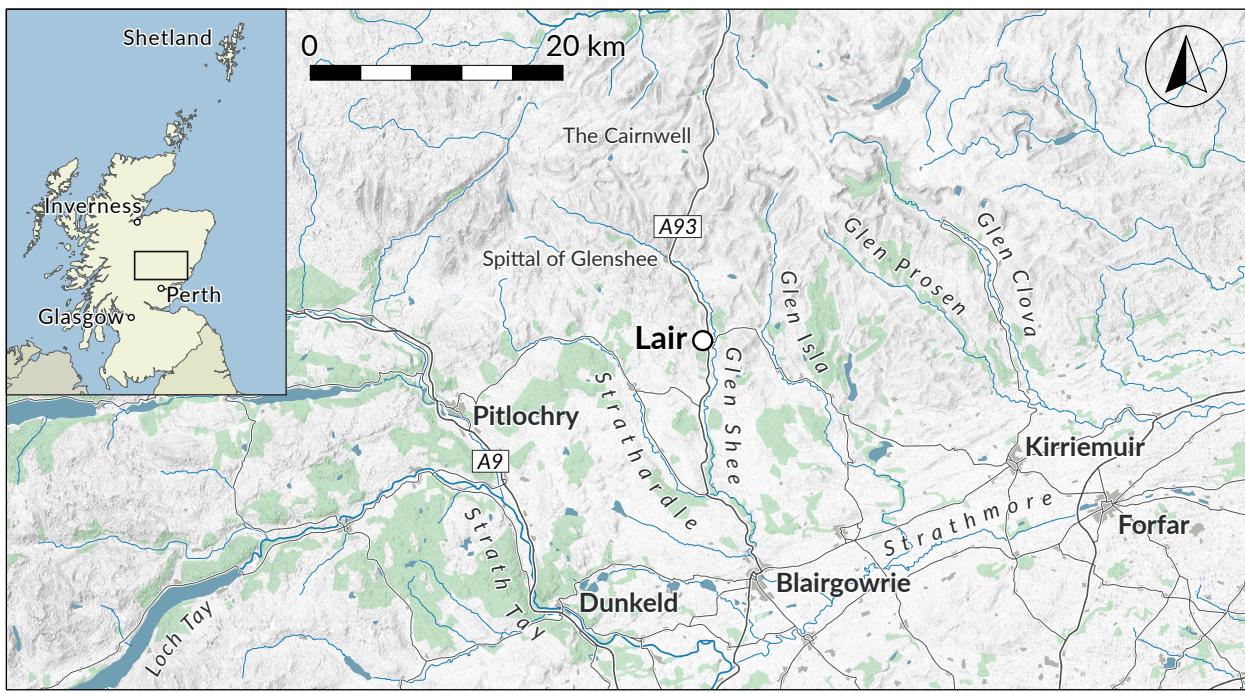
The true range and extent of the well-preserved upland archaeology in Glen Shee and Strathardle, however, only emerged following the first systematic survey by the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS) in the late 1980s. Integrating aerial photographic and ground survey, this was published as *North-east Perth: an archaeological landscape* (RCAHMS 1990). A major achievement of the survey was the identification of a new settlement type, the Pitcarmick-type building, though of precisely what date was then uncertain. Two overlay hut-circles, suggesting that they post-dated roundhouse settlement, representing an expansion in the settlement record that 'may follow closely on from the hut-circles, but equally may belong firmly in the medieval period' (RCAHMS 1990: 12). Subsequent excavation at Pitcarmick in the 1990s, by John Barrett and Jane Downes, then of Glasgow University, established a mid-1st to early 2nd millennia AD date range for these distinctive turf and stone buildings: however, these important results remained unpublished until 2012 (Carver *et al.* 2012).

The Glenshee Archaeology Project, resulting in the present publication, was developed in response to the largely untapped archaeological potential of these uplands, and the publication of the Pitcarmick

excavations in 2012. The overall aim of the project was to enhance understanding of 'everyday' life and economy for a period in which archaeological study in Scotland has almost exclusively focused on high status monuments and structures: mainly forts and other power-centres (e.g. Alcock and Alcock 1987; Alcock *et al.* 1989; Cook 2013b; Laing and Longley 2006; Lane and Campbell 2000; Mitchell and Noble 2017; Noble *et al.* 2013; SERF 2010), ecclesiastical sites (e.g. Carver 2008; Carver and Spall 2004; Lowe 2006, 2008) and Pictish carved stones (Henderson and Henderson 2004).

Excavation and environmental reconstruction focused on the site of Lair (Figure 1.1), a microcosm of the archaeology of the glen, which comprises several dispersed turf buildings within an assemblage of hut-circles, small cairns and a ring-cairn, probably variously dating from the Iron Age back to the Early Bronze Age. The RCAHMS survey identified Lair as significant, with the ground-plan of one group suggesting a possible sequence of three successive Pitcarmick-type buildings that might be revealed by further work (RCAHMS 1990: 12). This group is partly the focus of the excavations reported within.

Led by Perth and Kinross Heritage Trust, the project was developed as a programme of community archaeology. While none of the sites in the study area are Scheduled Monuments, the excavations were conceived in terms of large-scale evaluation rather than complete investigation of all surviving deposits, thus preserving the greater part of each site for future research. The project was delivered in partnership with Northlight Heritage and the University of Stirling, and funded by a variety of local and national organisations. Public engagement objectives focused on the principle of the outdoor classroom (Figure 1.2), providing learning opportunities for students in primary, secondary, and tertiary education, and for life-long learners. Training in excavation and survey was provided to volunteers from the local area and wider region, while participating undergraduate archaeology students from across Scotland provided near-to-peer training for primary and secondary school pupils. The project also sought to support sustainable tourist initiatives around the 100 km Cateran Trail, and its outreach products included a bespoke website and promotional leaflet, *Explore the Archaeology of Glenshee*; community posters and talks; and in 2014 a 'living history' fair in Blairgowrie. The fair



Contains OS Data © Crown copyright and database right 2018. SRTM, ASTER GDEM is a product of METI and NASA, Imagery GIScience Research Group @ Heidelberg University.

Figure 1.1 The location of the site at Lair, Glen Shee, Perth and Kinross.



Figure 1.2 Community engagement and the outdoor classroom.

saw re-enactments and craft demonstrations, including turf-wall construction, and wood-working and metal-working, the last reproducing excavated blades and buckles and displaying these beside the original items.

The excavations employed an open policy for visitors, with site tours being provided, while guided walks of the wider landscape were also undertaken as part of the annual Perthshire Archaeology Month programme.

1.2 North-west European turf and timber houses: an international context for the excavations at Lair

Daniël Postma

Cultural connections across the North Sea

Given the relative isolation of Glen Shee, maritime connections may appear irrelevant to the development of settlements such as Lair, however their potential influence can be better appreciated when the area is viewed from the perspective of a 'maritime cultural landscape'. This broad concept encompasses not only water-based components such as waterways, ships and harbours but also their role in driving large scale overseas undertakings covering themes such as political power, religious ideology and agricultural, as well as artisan and industrial production (Westerdahl 1992, 2014; cf. Crumlin-Pedersen 2010).

Cultural connections across the North Sea became increasingly significant in the early medieval period; with Anglo-Saxon migrations to what is now England in the late 4th and 5th centuries (Morris 2015; Nieuwhof 2011). Cultural connections were maintained as petty kingdoms developed throughout the North Sea's coastal regions, in periods and sub-regions variously labelled Merovingian, Carolingian, Viking and Norse. As Myhre notes 'The sea and ships bound together the Germanic kingdoms, leaders and peoples of the regions; the North Sea became a Germanic North Sea.' (2000: 47–48). Initial Anglo-Saxon colonisation did not emerge from a single, uniform culture, but rather a 'close network of economic, socio-political, cultural and ideological relations across the southern North Sea,' often described as a 'North Sea Culture' (Nicolay 2014: 14; Myhre 2000: 54). Against this liberal approach to what is 'maritime' and the extent of cultural boundaries, it is perhaps not a question of whether Lair could have been influenced by this North Sea Culture but rather to what extent it actually was.

Elements of societal development

The early medieval societies in this North Sea Culture witnessed increased centralisation of both political power and landed wealth, of which the mid-8th to 9th century manorial estates are one of the more enigmatic materialisations (Verhulst 2002: 33–34; Carver 2019: 207 ff.). It has been suggested that in Scotland such early estates are reflected in the later, historic land units known as *thanages*. As Ralston and Armit note (2003: 222), 'the formation of such holdings will have provided the building blocks for the establishment of extensive kingdoms in the mid-first millennium AD' and debate is ongoing as to whether these elements of early state formation were a product of regional, indigenous developments or adopted from political or monastic

land management models in place in the southern North Sea regions at that time.

The challenge of distinguishing between these options is in the difficulty to demonstrate causal effects between scarce archaeological evidence and the complex and changing economic, political and ideological constructs which they may reflect. Elsewhere in the North Sea area, elite gift-exchange and the later establishment of market trading centres known as *emporia*, left sufficient material traces to allow reconstructions of early medieval regional kingdoms to be made (e.g. Nicolay 2014, 2015). In Scotland, however, historical sources and place-name studies refer to a particularly complex mix of Britons, Picts and Scots, noted in archaeology for their remarkably scant material legacy. Further, it has been noted that it is 'difficult to correlate the Early Historic kingdoms [...] straightforwardly with the archaeological evidence of structures and of the more mundane material culture' (Ralston and Armit 2003: 221). How, then, may we reconstruct the extent of Glen Shee's cultural connections across the North Sea?

A north-west European building tradition?

The increased number of surveyed and excavated early medieval buildings in north-west Europe is allowing new avenues of research into cultural developments and connections. Building types thought to be indicative of the northward expansion of Anglo-Saxons are timber halls and sunken-featured buildings, which appeared in Northumbria from the 6th century and south Scotland in the 7th century (Carver 2019: 193; Ralston and Armit 2003: 227–29). The Pitcarmick buildings demonstrate that rectilinear buildings were also in use north of the Tay, but their design differed considerably from their southern counterparts; instead of post-built, angular, short and byre-less buildings, they were turf-walled, round-ended, long and fitted with an internal byre. Further, their appearance differs even more from the preceding local house design of post-built roundhouses (Carver 2019: 184–85, 195). It is therefore understandable that Carver, in considering the 'first encounter with a genre [...] that has yet to be comprehensively addressed' leant heavily towards a connection with longhouses on the continent (2012: 189–95).

It is probable that the cultural origins of the Pitcarmick buildings are as complex as they are interesting. The typological similarities of ground plans across the North Sea are without doubt an important focal point for further analyses. However, the functional use of these buildings is equally important, and specifically the relationship between buildings incorporating byres and those with separate byres. For example, the occurrence of short-houses in Anglo-Saxon England

has historically been considered to be at odds with longhouses on the continent (Hamerow 1999). On the coast of the northern and western Netherlands, however, it would appear that at the time of Anglo-Saxon migration the dominant building design was in fact also of separate houses and byres (Postma 2015). The difference between buildings of the continent and Anglo-Saxon England may not have been as different as was previously thought. From this perspective, while the Pitcarmick buildings may appear more similar to their continental counterparts, they may equally reflect an upland variation of Anglo-Saxon buildings to the south.

A different view could be offered, from a technological perspective, through the suggested use of cuppills ('crucks') in roundhouse construction. This may suggest a closer relationship between circular and rectilinear buildings than typological or use of space analyses might suggest (Walker 2008; see also Strachan 2013) – effectively a practical rearrangement of an indigenous internal timber structure.

In summary, to place the Pitcarmick buildings of eastern Scotland in their wider cultural context, we must first understand how these buildings functioned in terms of their typology, use of space, technology and structural design: we must construct a *functional typology*. First attempts at developing such an interpretative framework for early medieval and later medieval turf longhouses in the Netherlands successfully demonstrate how variations in building length, presence and absence of byre areas, choice of walling material and design of the timber structure (including cuppills), can be charted and explained in a structured and meaningful manner (for the early medieval see Postma 2015; for later medieval see Nicolay and Postma 2018).

1.3 The archaeological setting

Prehistoric and early medieval archaeology in the region

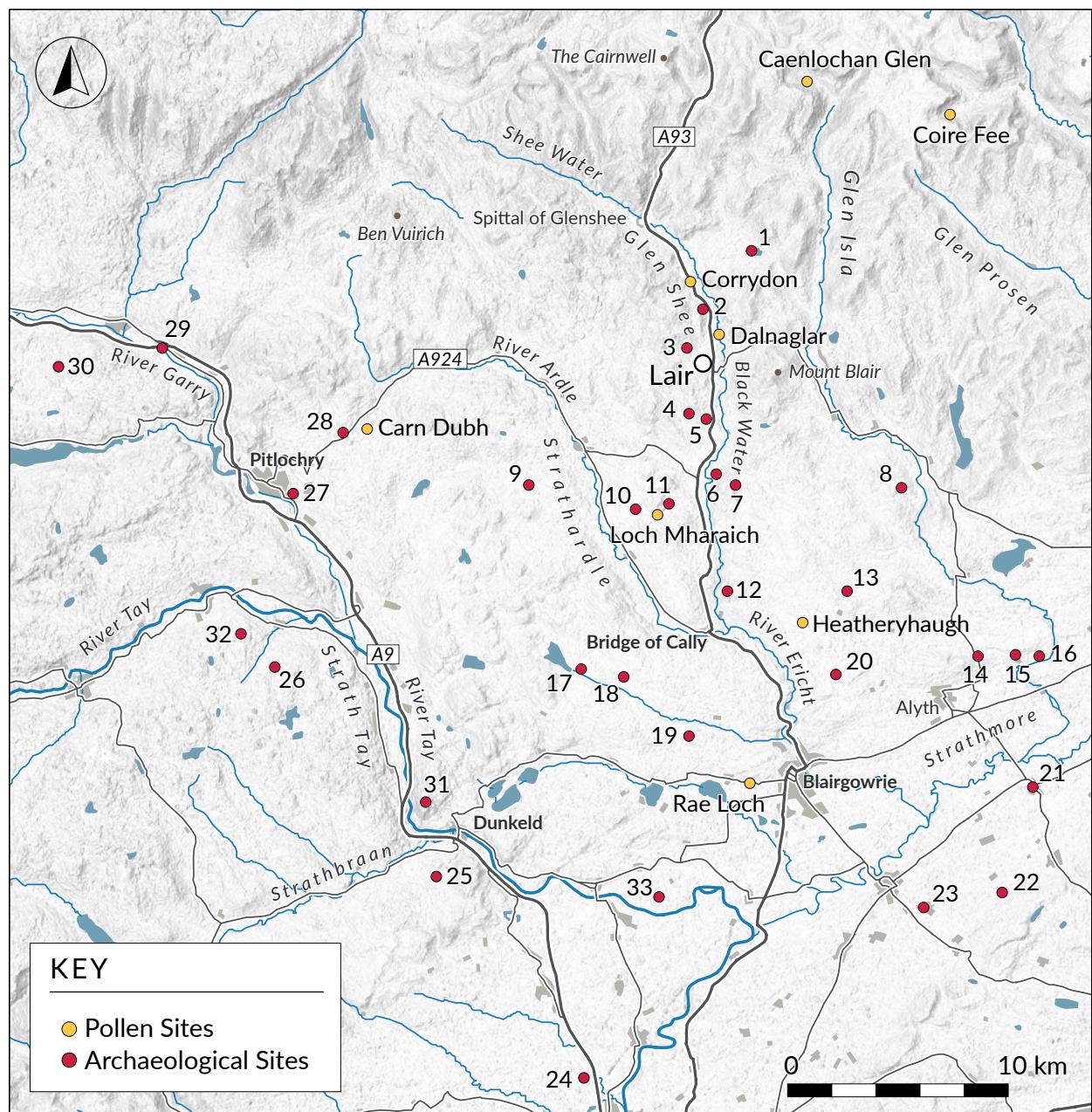
The uplands of Perth and Kinross east of the rivers Tay and Garry (Figure 1.3) contain well-preserved and diverse settlement remains from at least the Middle Bronze Age to the 19th century. Recorded by ground and aerial survey, the earlier settlements typically comprise groups of roundhouse, some of them remarkably extensive and often occurring with field-systems, enclosures and cairn-fields (Harris 1985; Hooper 2002; RCAHMS 1990 and 1994 *passim*). Indeed, this part of Perth and Kinross contains one of the densest concentrations of this type of settlement known anywhere in Scotland. The roundhouses are both dispersed and in clusters, and commonly found between 300-400 m OD (Ordnance Datum: above sea

level) and less frequently between 400-500 m OD (Harris 1985; Hooper 2002; RCAHMS 1990: 2).

While some roundhouses are apparently in isolation, by far the majority are juxtaposed to combinations of 'clearance' cairns, lynchets and stone dykes, covering areas from c. 2 ha to 20 ha, with most between 8 ha and 14 ha; these ephemeral agricultural systems, which rarely include coherent traces of field enclosures, mainly fall between 210 and 420 m OD (Harris 1985). The chronology and variety of form of the roundhouses is illustrated by the eight excavated from a large group at Carn Dubh (ID26422; Figure 1.3: 28; Rideout: 1995) above Pitlochry at 300-400 m OD. They included the double-walled roundhouses, a distinctive regional site-type found throughout north-east Perth and Kinross and into neighbouring Angus, and named after Thorneycroft's site at Dalrulzion (ID29060; Figure 1.3: 11; Thorneycroft 1933). The excavations confirmed a Late Bronze Age date for these, and revealed a single-walled roundhouse of Early Iron Age which had been reconfigured in the early medieval period. Ard marks were also found beneath the Late Bronze Age buildings.

Forts east of the River Tay are relatively few and far between, their distribution primarily lying along the Sidlaw Hills (RCAHMS 1994: 51) and apparently avoiding the hinterland of Strathmore north of the Highland Boundary Fault. The exceptions, which lie on this natural boundary, are the King's Seat (ID27172; Figure 1.3: 31), on a craggy hill with a commanding position on the north side of the river above Dunkeld, and Barry Hill, overlooking the mouth of Glen Isla and dominating Strathmore at Alyth (ID31061; Figure 1.3: 14; RCAHMS 1990: 5, 27-9). Both are multi-phased: the former has been mooted as potentially early medieval in date (Alcock *et al.* 1989: illus 12 and 209) and the early results of ongoing research would appear to confirm this (Strachan 2017). Of other small forts known in Strathmore, that at Inchtuthil (ID28598; Figure 1.3: 33) is notable for the Roman masonry incorporated into its rampart, which perhaps indicates a minor early medieval caput contemporary with the barrows (ID28599; Winlow 2010) that overlie the Roman fortress.

The upland settlement evidence west of the River Tay has not seen recent survey and publication comparable to north-east and south-east Perth and Kinross (RCAHMS 1990 and 1994). The evidence is similarly varied but also different, including a concentration of massive-walled roundhouses, with a long history of study, and variously called 'circular forts' (Watson 1913), 'ring-forts' (Stewart 1969), 'homesteads' (Taylor 1990) and most recently 'monumental roundhouses' (Strachan 2013). Of around 60 known, six have been excavated: Borenich (ID25880; Watson 1915), Litigan (ID24945) and Queen's View (ID25844; Taylor 1990), two



1: Loch Beanie - crannog	12: Hill of Ashmore- Pitcarmick building(s)	23: Kettins - Pictish stone
2: Finegand - Pitcarmick building(s)	13: Tullymurdoch- Pitcarmick building(s)	24: Newmill - souterrain
3: Corra Lairig - township	14: Barry Hill - fort	25: Balhomish - Pitcarmick building(s)
4: Glenkilrie - Pitcarmick building(s)	15: Shanzie - souterrain	26: Balnaguard Burn - Pitcarmick building(s)
5: Glenkilrie - field systems	16: Bruceton - Pictish stone	27: Black Spout - roundhouse
6: Easter Bleaton - township	17: Loch Benachally - Pitcarmick building(s)	28: Carn Dubh - roundhouses
7: Knockali - Pitcarmick building(s)	18: Ranagerig - Pitcarmick building(s)	29: Aldclune - roundhouse
8: W. Peathbaugh- Pitcarmick building(s)	19: Marleehill - Pitcarmick building(s)	30: Allt Cosach - Pitcarmick building(s)
9: Pitcarmick - type-site	20: Welton of Creuchies - Pitcarmick building(s)	31: King's Seat - fort
10: Balnabroich- Pitcarmick building(s)	21: Meigle - Pictish stones	32: Castle Dow - fort
11: Dalrulzion - roundhouses	22: Keillor - Pictish stone	33: Inchtuthil - fort

Figure 1.3 Selected archaeological and pollen sites mentioned in the text.

sites at Aldclune (ID25822; Hingley *et al.* 1997; Figure 1.3: 29) and the Black Spout (ID26267; Strachan 2013; Figure 1.3: 27). While Stewart (1969) and Taylor (1990) suggested an early medieval date for these from limited radiocarbon assays and a small number of finds, the Aldclune and Black Spout excavations have confirmed these as Late Iron Age constructions, albeit with some early medieval re-use. Litigan and Queen's View have been suggested as part of a wider array of ring-forts in the early medieval (Carver *et al.* 2012: 190-191; Noble *et al.* 2013: 1142); however, the evidence for re-occupation at either of these sites in this period is not clear.

There are also a number of larger forts in the uplands of Strath Tay, in contrast to the upland east of the Tay as outlined above. While some, such as Castle Dow (ID26356; Figure 1.3: 32) overlooking Strath Tay at Grandtully (Hutcheson 1889: 366-7, Figure 7) are likely to be Iron Age in date, Dundurn (ID24873) at the east end of Loch Earn remains the definitive early medieval fort of the area. Excavation here (Alcock *et al.* 1989) established a complicated building sequence spanning the 6-9th centuries AD with high status artefacts including ceramic and glass imports, bronze-working and locally produced leather and iron objects, including an important assemblage of nails and fragments of two barbed-bolt padlocks. The Annals of Ulster record a siege there in AD 683 and the Scottish Regnal Lists state that Girg, son of Dungal, died there in c. 889 AD, the latter suggesting that Dundurn was still regarded as a royal seat of the Scots at least in the decades preceding Kenneth MacAlpin's (Cináed mac Ailpin) amalgamation of the Southern Picts and Scots (see Section 1.5).

Another early medieval contender is Caisteal Mac Tuathal (ID24911) on Drummond Hill above Kenmore. With a controlling position overlooking the River Tay in the Appin of Dull, its Gaelic name is said to be connected to Tuathal, the Abbot of Dunkeld in the 9th century AD; the Annals of Ulster record that 'Tuathal son of Artgus, chief bishop of Fortriu and Abbot of Dunkeld' died in AD 865 (Watson 1926: 238). While unexcavated, both its form and controlling location over an important terrestrial pass are reminiscent of both Dundurn and the King's Seat, Dunkeld. Also in the uplands west of the Rivers Tay and Garry, Pictish and Early Christian carved stones are associated with important early ecclesiastical sites at Fortingall (ID24976; Robertson 1997), Dull (ID25617; Macdonald and Laing 1973) and Dunkeld (RCAHMS 1994: 89), and may indicate others at Logierait (ID26339 and 26341), Dunfallandy (ID26295), Old Faskally (ID26439) and Struan (ID25819).

In the lowlands, the cropmark record for Strathmore also features an extensive array of unenclosed roundhouses of probable Bronze Age and Iron Age date, again expressed in a variety of forms (RCAHMS 1994: 43, 45-8). They are frequently found in association

with souterrains (Armit 1999; RCAHMS 1994: 63-68; Wainwright 1963). In two instances, at Shanzie Farm, Alyth (ID183018; Coleman and Hunter 2002; Figure 1.3: 15) and Newmill, Bankfoot (ID27007; Watkins 1980) souterrains associated with Late Iron Age settlement produced evidence of early medieval activity. There are also numerous larger cropmark enclosures of probable Iron Age date throughout the lowland zone. At Upper Gothens (ID28912) near Blairgowrie, however, excavation of a sub-circular enclosure of c. 60 m in diameter revealed a ditch and internal palisade, and a complex of palisade slots defining an inner area that produced a tinned iron buckle and evidence of metal-working with radiocarbon dates suggesting use from c. 885-1024 AD and c. 1040-1259 AD (Barclay 2001).

Crannogs are a frequent form of settlement in the uplands west of the River Tay, and particularly on Loch Tay, which has one of the densest concentrations in Scotland (Dixon 2004: illus 1). To the east of the Tay, examples are recorded on Stormont Loch (ID72061) and Loch Clunie (ID28959), the latter occupied by a late medieval tower-house, and in Glen Shee on Loch Beanie (ID29261), near the Spittal of Glenshee, where an island dwelling is depicted and intriguingly annotated on Timothy Pont's late 16th century map as '*Loch Sesatur sumtymis [th]e duelling of [th]e cheef man of Glen Chy and StraArdle*' (Figure 1.3: 1; Figure 1.4). While their known distribution is dictated by the availability of suitable waterbodies, the drainage of bogs and minor lochans in the lowlands during the 18th and 19th centuries may have destroyed others (Stratigos 2016).

While in the upland east of the Tay there are no Pictish symbol stones, the lower end of Strathmore has several Class 1 examples, unworked stones with incised symbols dating from the 6-8th centuries AD. These include Bruceton, which bears an arch and 'Pictish beast' and stands upright on the valley floor of the River Isla (ID31054; Figure 1.3: 16) in an area with antiquarian records of the discovery of human remains and cists (RCAHMS 1990: 87-8). It may be one of the few *in situ* Pictish stones in the area (Clarke 2007). The Keillor Class 1 stone (ID30545; Figure 1.3: 22) stands on the opposite side of the strath, and having been re-erected in the mid-19th century, it is not clear whether it was originally erected on the probably prehistoric grass-covered cairn on which it now stands. A pillar-like stone, Keillor bears three symbols, with a wolf at the top above a double disc and Z-rod and a mirror below, and is possibly of 7th century AD date (RCAHMS 1994: 5, 95). Later Pictish stones in Strathmore include a small rough cross-slab from Alyth (ID30756), a fine cross-slab of probable 8th or 9th century date at Kettins (ID30552; Figure 1.3: 23; RCAHMS 1994: 5, 97) and on the floor of the valley the remarkable collection of sculptured stones from Meigle (Figure 1.3: 21; RCAHMS 1994: 3-5, 98-102), which forms one of the most important

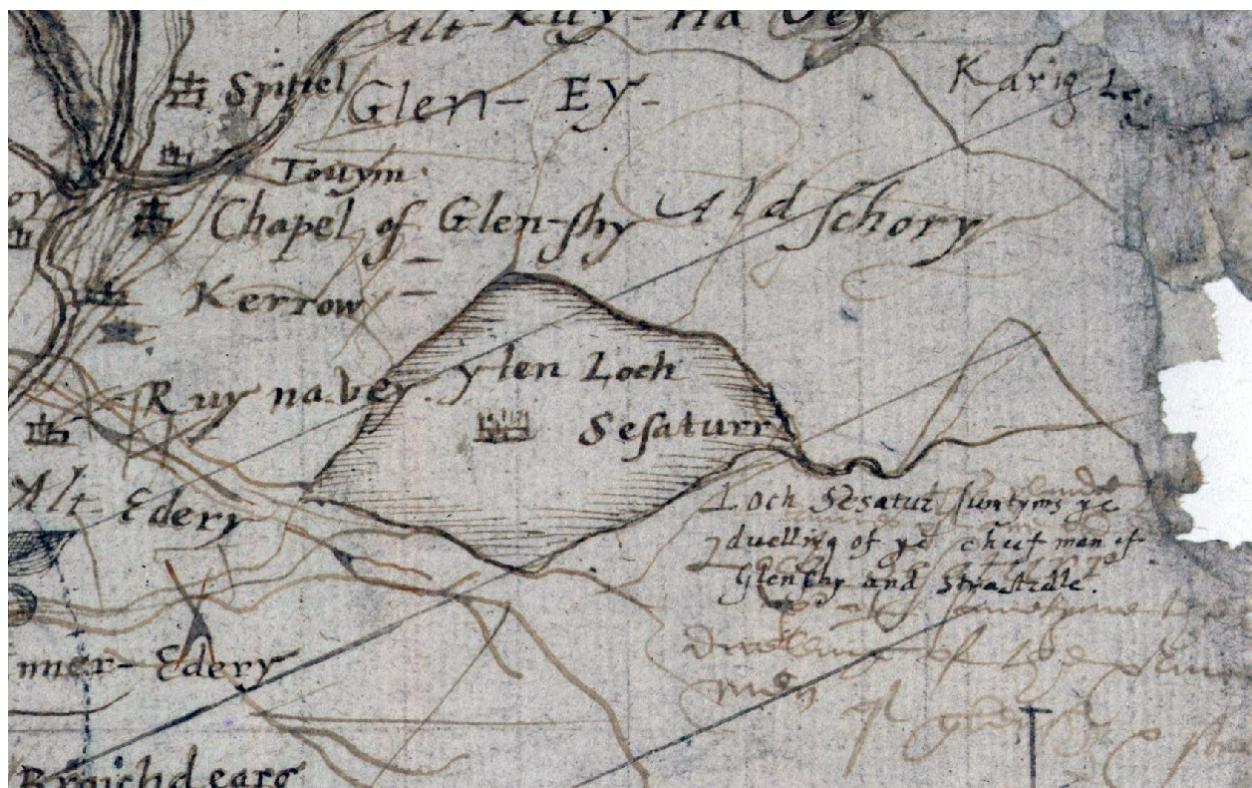


Figure 1.4 Pont's late 16th century map showing the crannog on Loch Beanie: '[th]e duelling of [th]e cheef man of Glen Chy and StraArdle' (Reproduced by permission of the National Library of Scotland).

collections of Pictish sculpture in eastern Scotland. While none of the 30 or so carved stones from Meigle are likely to pre-date c. 800 AD, the nature and scale of the assemblage suggest an important early medieval ecclesiastical centre from around that date (Ritchie 1995). Further south at the head of the Tay estuary, Scone was to emerge as the principal royal site c. 900 AD supplanting earlier power-centres that included Forteviot and Abernethy in Strathearn and Bertha just to the north of Perth (Driscoll 1998; Driscoll *et al.* 2010; Strachan 2011: 8-11).

Pitcarmick buildings, the principal subject of this report, are discussed below in the context of a more detailed review of the archaeology of Glen Shee and Strathardle, where the majority of the known examples are located. While others have been recorded by aerial photography and ground survey in the neighbouring hills of Angus, only a few possible examples have been identified west of the Tay (Bailey 2014: 22-24; Cowley 1997; Figures 1.3 and 1.10).

The archaeology of Glen Shee and Strathardle

From the gently undulating, agriculturally rich floor of Strathmore and the valley floors of the Isla and Tay, the hills rise steeply north-west across the geological faults that make up the Highland Boundary Fault. These separate the lowland Old Red Sandstone from upland Dalradian metamorphosed mudstones, sandstones and

limestones. The hills rise to extensive plateau surfaces of till (boulder clay) and acid metamorphic rocks from around 400 m OD to between 900 m and 1000 m OD on the summits at the top of Glen Shee. Immediately east of Bridge of Cally the River Ardle, draining Strathardle to the north-west, and the Black Water (known as the Shee Water north of Lair) from Glen Shee, come together to form the River Erict, which has cut a narrow gorge through the lower reaches of Glen Shee to debouch through the Highland Boundary Fault escarpment at Blairgowrie.

The floor of Strathardle is a 20 km long, 0.5 km wide, continuous alluvial 'strath' (floodplain) before climbing to a col at Carn Dubh at c. 400 m OD above Pitlochry. Glen Shee extends in a series of more isolated glaciofluvial and alluvial basins to the Spittal of Glenshee (c. 350 m OD), from which the modern road (A93) to Braemar turns steeply up Gleann Beag to make the pass below The Cairnwell, some 25 km north from Blairgowrie (Figure 1.1).

The RCAHMS survey (1990) revealed a wealth of archaeological sites surviving as earthworks, including prehistoric, medieval and later, pre-improvement settlements and cultivation remains. The nature of earlier prehistoric sites in Glen Shee and neighbouring Strathardle again appears to differ from Strath Tay to the west, notably in that Neolithic round barrows or chambered long cairns are apparently absent,

though an antiquarian excavation of the Grey Cairn at Balnabroich claimed to find a passage leading towards the centre (Stuart 1866: 405-6). A scatter of cup-and-ring marked stones are potentially of this date, but the first significant exploitation of this landscape is revealed by the wealth of Bronze Age funerary and ceremonial monuments, which include round cairns, standing stones and stone circles. Amongst them is a group of five ring-cairns, including an example at Lair (ID29510; Figure 1.5) which is by far the largest of this compact geographical group (RCAHMS 1990: 2).

The area hosts one of the densest concentrations of prehistoric settlement in Scotland, with over 845 roundhouses in the area surveyed, and many others extending across the hills into the fringes of Strath Tay. Unusually amongst such settlements, the roundhouses display a wide range of morphological variation (Figure 1.6) and, as we have seen, survive at high altitudes within the range 300-500 m OD. The conspicuous absence of forts has also been noted above, the exception being Barry Hill, placed on the boundary between the lowland and upland zones, while other later prehistoric sites include 28 burnt mounds, some of which are at similar altitudes to the roundhouses (RCAHMS 1990: 5).

Two monument types are peculiar to the area and remain amongst the most distinctive forms in the region. One is the little studied Dalrulzion-type double-walled roundhouse (Thorneycroft 1933), the second, the 'Pitcarmick-type building' first presented by the RCAHMS (1990). The latter range between c. 10 and 30 m in length, with rounded ends and frequently curved or bowed sides and their interiors are often wider at one end, tapering into a narrower sunken-floored area; around half show signs of a partially sunken floor. The primary building material is turf though one or two are faced externally with a low kerb of boulders. They commonly share locations with prehistoric roundhouse settlements, and are rarely found near pre-improvement farmsteads and townships.

RCAHMS suggested the Pitcarmick buildings were byre-houses, post-dating roundhouses, but, without conclusive dating evidence, it remained uncertain whether they were of early medieval or medieval date (1990: 12). The question for one group of Pitcarmick buildings was resolved with the excavations at the type-site of Pitcarmick (IDs27250 and 27264; Figure 1.3: 9) in Strathardle. Situated at 420 m OD on two ridges (north and south) which descend east towards the River Ardle on either side of a shallow boggy valley, excavations were undertaken by Glasgow University over 1993-5 (Barrett and Downes 1993, 1994), although not published until 2012 (Carver *et al.* 2012). Later prehistoric roundhouses, Pitcarmick buildings and rectangular buildings had been recorded amongst clearance cairns, field

boundaries and cultivation remains (RCAHMS 1990: 75-8). Five areas were excavated: the space around an assumed Bronze Age burial cairn (A); a pair of roundhouses (B); a clearance cairn and field boundary (D); and two Pitcarmick buildings (C and E) (Carver *et al.* 2012: *passim*, illus 6). A hearth belonging to a stone and turf-built roundhouse was ¹⁴C dated to 1398-920 BC.

Of the Pitcarmick buildings excavated, Building C was only partially examined by two trenches (Carver *et al.* 2012: illus 13) and while Building E was opened fully in plan (Carver *et al.* 2012: illus 21), there was a reluctance to excavate to depth and establish natural deposits at both buildings (Carver *pers comm*). Both buildings were interpreted as byre-houses, with south-facing entrances at the junction of dwelling and byre, offering access to a domestic west end centred around a large hearth, or a byre at the east end with stalls on either side of a drainage gully (Carver *et al.* 2012: 184). The walls were interpreted as being constructed with turf-and-rubble layers. They broadly dated to the period AD 700-850, but had been reused c. 1000-1200 AD. Subsequently they were subjected to an episode of later medieval or post-medieval ploughing.

The smaller building (C1) measured 22 m by 7.5 m externally and 18 m by 4 m internally, with 2 m wide turf walls, a large hearth and post-pits at each end and in the centre. The paved entrance lay on the south side and was accessed through a porch (Carver *et al.* 2012: 159-60). It was interpreted by Carver as 'one of the earliest byre-houses yet defined in Britain' (Carver *et al.* 2012: 163) with an 8 m long dwelling area and 10 m byre with animal stalls. It was occupied in two phases, with construction in the late 7th or early 8th centuries AD, with two ¹⁴C dates of AD 680-880, and re-occupation in the 11-12th century AD, through a single ¹⁴C date of AD 1020-1180 from the final floor deposit (Carver *et al.* 2012: 184-185).

The larger building (E) was found to consist of two superimposed structures, a sub-square stone building (E2) overlying the west end of a narrower turf and stone building with a round east end (E1). Building E1 was incompletely excavated and E2 was left in place (Carver *et al.* 2012: 165). E1 measured 27.5 m by 7.5 m externally, 22.5 m by 4.5 m internally, and was similar in layout to C1 with a domestic west end including a 1 m long rectangular hearth and a paved entrance with 'large flat stones' on the south side; large post-pits at each end, and smaller post-pits along the centre of each wall-line and around the hearth (Carver *et al.* 2012: illus 22). The walls were interpreted as being constructed in layers of turf and stone, with post-holes at the base of the walls holding 'vertical posts or crucks to support a roof' (Carver *et al.* 2012: 168) and the large pits at either end interpreted as 'end crucks', with the



Figure 1.5 The Early Bronze Age ring-cairn at Lair in the foreground, with glacial deposits behind and Mount Blair beyond (D. Strachan: 2013).



Figure 1.6 Aerial view of the multi-period site at Wester Peatvaugh (ID31021), including clearance cairns, roundhouses, Dalrulzion-type roundhouses, Pitcarmick buildings and cultivation remains (D. Strachan: 2001).

reconstructions at Newtonmore being suggested as a potential comparator. Along the centre of the east end of E1 a stone-capped shallow gully c. 1.2 m wide was suggested to be a well-used animal path consolidated with stones, presumably for drainage (Carver *et al.* 2012: 171). Building E1 was assigned to the 7-9th centuries AD, with three ¹⁴C dates with a combined age-range of AD 640-890, and the smaller building E2 from the 11-12th centuries AD, with two ¹⁴C dates spanning AD 1020-1160 from the floor layer (Carver *et al.* 2012: 184-185), while ploughing had occurred between the dates for each building (Carver *et al.* 2012: 168).

In the overall interpretation Carver suggested that the Pitcarmick buildings were associated with 'husbandry of sheep and possibly cattle, and perhaps...part of the land under cultivation' (Carver *et al.* 2012: 185), although even with a third suggested 'longhouse', it was suggested the group 'does not amount to a village' but rather a 'zone of dispersed farmsteads' (Carver *et al.* 2012: 184-185).

The importance of the Pitcarmick buildings has been established in the literature (e.g. Alcock 2003; Dalgleish 2012; Foster 2004; Govan 2003) and the rarity of settlement structures in early medieval Scotland acknowledged in the Scottish Archaeological Research Framework, with fewer than ten domestic structures known on the mainland (ScARF 2012: Medieval Panel Section 1.42). Away from the uplands of Perth and Kinross, and Angus, Norse settlement in the Northern and Western Isles perhaps provides some of the best parallels as early medieval buildings in Scotland (ScARF 2012: 36), but importantly the buildings at Pitcarmick were constructed long before any recorded Norse activity in Scotland during the very late 8th century AD, or indeed incursion into the region during the reign of Kenneth MacAlpin (AD 843-58).

RCAHMS (1990: 5-6) noted three zones of subsequent medieval and post-medieval settlement. The first, or primary settlement, took in the floors and lower slopes of the main valleys and the mouths of the main tributary valleys, and represents the areas where the main estate centres and principal settlements shown on 18th-century maps occur, though the remains of

relatively few of them were still visible on the ground. The second, a zone of secondary settlement locations, extended higher up the hills and further back along the tributaries and, having reverted to moorland, contained a mass of permanent townships and rigged fields, interspersed with the remains of seasonally occupied shielings. Beyond this, high up into the heads of the glens, the third zone contains only shieling activity. The townships range considerably in scale and location. Easter Bleaton (ID29063; Figure 1.3: 6 and Figure 1.7) situated on the valley floor of Glen Shee at c. 260 m OD extends over 800 m and consists of at least 52 buildings, a series of enclosures, four kilns and a line of five retting ponds (RCAHMS 1990: 114). Corralairig (ID29511; Figure 1.3: 3 and Figure 1.8) high in the tributary glen above Lair at 420 m OD comprises nine buildings, a corn-drying kiln, several small



Figure 1.7 The extensive township at Easter Bleaton on the glen floor c. 5 km south of Lair (D. Strachan: 2007).

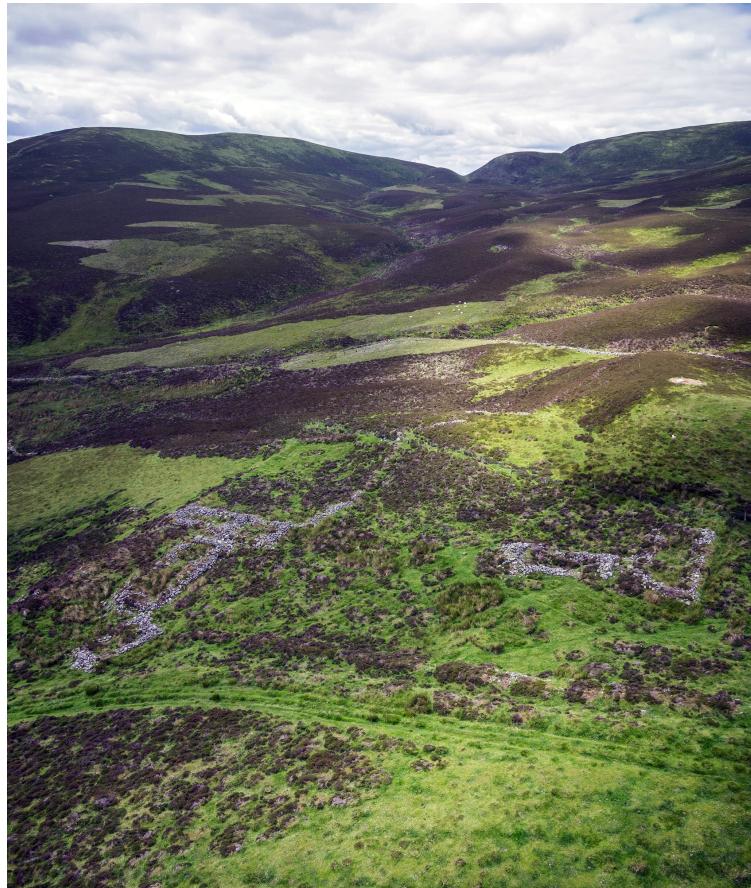


Figure 1.8 The upland township of Corra-lairig (E. Martin: 2014).



Figure 1.9 Pre-improvement field-systems at Glenkilrie (D. Strachan: 2007).

enclosures and numerous large fields. The townships were abandoned by or in the 19th century, and many of those in the primary settlement zone were replaced with improved farms.

Critically, monument visibility in these uplands is dependent on the impacts of subsequent phases of agriculture, with each phase of exploitation from the Bronze Age onwards destroying or at least modifying the remains of previous activities (RCAHMS 1990: 1). The three zones of preservation identified by the RCAHMS were: firstly, areas under modern cultivation where preservation is poor; secondly, areas where medieval and post-medieval cultivation traces (broad rig or rig-and-furrow) survive, essentially representing the secondary medieval and later settlement zone; and thirdly, the heather moorlands which were cultivated rarely and which for much of the Middle Ages were given over to cattle and sheep, either through specialist pastoral farms or through shielings. Many of the roundhouses and Pitcarmick buildings survive in this third zone, and though there are often traces of cultivation rigs

around them, the episodes of ploughing, as at Pitcarmick (above), have been relatively light and/or brief, thus allowing visible remains of the earlier settlements to survive. The mosaic of settlement and preservation zones, however, is complex and interwoven, and boundaries between them are seldom clear. The remarkably intact post-medieval landscape of settlement and cultivation remains in the glens above the Spittal of Glenshee (RCAHMS 1990: Figure 278 1A-B), for example, transcend all three settlement zones, but virtually every trace of any earlier remains have been obliterated. However, behind Glenkilrie, c. 3 km south of Lair (RCAHMS 1990: Figure 272.1; Figure 1.3: 5 and Figure 1.9) post-medieval and prehistoric settlement and cultivation remains are closely interwoven and there are not only at least two Pitcarmick buildings, but also other large buildings of unknown date. The archaeological sites at Lair lie on the margin of the secondary settlement zone, where there is certainly evidence of post-medieval cultivation, but probably as no more than outfields and the ploughing has certainly not been sufficiently intense to erase the assemblage of hut-circles, Pitcarmick buildings and scattered small cairns.

1.4 Pollen-analytical evidence for land-use change in and around Glen Shee

The primary woodland that clothed the dry slopes of the hills prior to c. 4000 BC was of *Betula* (birch) and *Corylus* (hazel), with a closed canopy, and with varying proportions of elm (*Ulmus*), particularly on base-rich soils as at Dalnaglar (Figure 1.3) across the glen from Lair (Durno 1962), oak (*Quercus*), rowan (*Sorbus*) and ash (*Fraxinus*), with alder (*Alnus*) and willow (*Salix*) on the valley floors and wetter soils (Bennett 1989, 1996; Caseldine 1979; Tipping 1994, 1995a; Walker 1977). The dry woodland reached altitudes close to the mountain summits in the north of Glen Shee, with Scot's pine (*Pinus*) displacing *Quercus* at these altitudes (Huntley 1994).

The earliest recorded pollen-analytical anthropogenic modifications are seen c. 3700 BC. In the hills at Carn Dubh on the southern slope of Ben Vrackie (Figure 1.3), several pulses of rapid, though only partial, woodland loss occurred between c. 3700-3500 BC and again from c. 2700-2300 BC, probably through sustained grazing by domestic livestock (Tipping 1995a, 2013; Tipping in Rideout 1995). *Calluna* (ling heather) was established within grassland from c. 3000 BC. Caseldine's (1979) pollen analyses from plateau surfaces at Loch Mharaich and Heathyraugh (Figure 1.3) are undated but can be interrogated using regionally synchronous pollen-stratigraphic events (Birks 1989) and assigning to the early Neolithic *Ulmus* decline a date of c. 3700 BC, ¹⁴C dated at Carn Dubh (Tipping 1995a). Woodland around Loch Mharaich and Heathyraugh may have been

disturbed by people before the Neolithic, but clearer evidence for anthropogenic woodland clearance at these sites is seen after c. 3300 BC.

Late Neolithic and Early Bronze Age grazing pressures sharply reduced *Corylus* trees around Loch Mharaich after c. 2500 BC, then more gradually until c. 2000 BC when all trees were impacted (Caseldine 1979). Grazing pressures were intensified at Carn Dubh after c. 2200 BC (Tipping 1995a) and at an estimated c. 2400 BC, for perhaps two centuries or so, at Durno's (1962) undated pollen analyses at Dalnaglar. Yet at Heathyraugh, woodland regenerated after c. 2250 BC (Caseldine 1979). Single pollen grains of cereal type are recorded at Loch Mharaich and Heathyraugh at an estimated c. 2500 BC (Caseldine 1979) but are not defined more closely (cf. Andersen 1979). They are not strong evidence for upland crop cultivation, as Tipping concluded at Carn Dubh after re-assessing his pollen record there in 2013. Caseldine's (1979) records at Heathyraugh and Loch Mharaich are truncated within the Bronze Age.

On the highest ground, between 500 m and 700 m OD, woodland remained barely altered until c. 900 BC when slight grazing pressures (or the effects of climatic deterioration) encouraged grassland and heath (Huntley 1981). Trees were poorly represented at Carn Dubh after c. 650 BC at the end of a phase of woodland loss (Tipping 1995a). On the valley floor at Dalnaglar, the first substantive woodland loss is estimated to have begun c. 700 BC (Durno 1962).

Pollen analyses by Durno (1962) and Huntley (1981) are too sparse in the last two millennia to warrant further dissection. The Carn Dubh pollen record (Tipping 1995a, 1995b, 2013) is much the best description of later prehistoric and early medieval upland land-use change in the Perthshire hills, and highly relevant to the landscape at Lair. The Carn Dubh record is resolved at c. 100 year intervals between c. 650 BC and c. 350 AD and at c. 50 year intervals between c. 350-750 AD, though with only two dating controls in the last c. 2400 years. The landscape in the 1st millennium AD was sharply differentiated into areas of valley floor peat and acid mineral soils. Re-assessing this period in more detail than in 1995 and 2013, woodland recovery after c. 150 AD was followed by short-lived assaults by people on trees at c. 300 AD, when a pulse of eroded soil was pushed across the peat. A final reduction of dryland trees is directly ¹⁴C dated to AD 630-840. Trees probably still grew after this on peat and wetland soils filling the valley floor, but away from the peat, grassland dominated, though pastoral indicator herbs were not common. A single cereal type pollen grain is recorded after AD 630-840 but no significance is placed on this. The pollen record at Carn Dubh is probably truncated at some time after c. 1000 AD.

In the lowlands, the late prehistoric and early medieval pollen record at Rae Loch (Edwards and Whittington 1998; Edwards *pers comm*: Figure 1.3) is highly resolved and ¹⁴C dated, but assays have large laboratory errors and one demonstrable age 'reversal'. The beginning of a major decline in woodland is directly dated to 1681–1231 BC and its end interpolated at 160 BC–AD 300, the lowest abundance of tree taxa in the last c. 3000 years. Clearance was initially for pasture but sustained representation of cereal type pollen commenced at an interpolated 100 BC–AD 210. Partial woodland regeneration occurred AD 33–542. Though grazed grassland was lost then, proportions of cereal type pollen were maintained. Later, directly but imprecisely dated to c. 91–600 AD there was major and very rapid deforestation as both cereal cultivation and grazed grassland expanded.

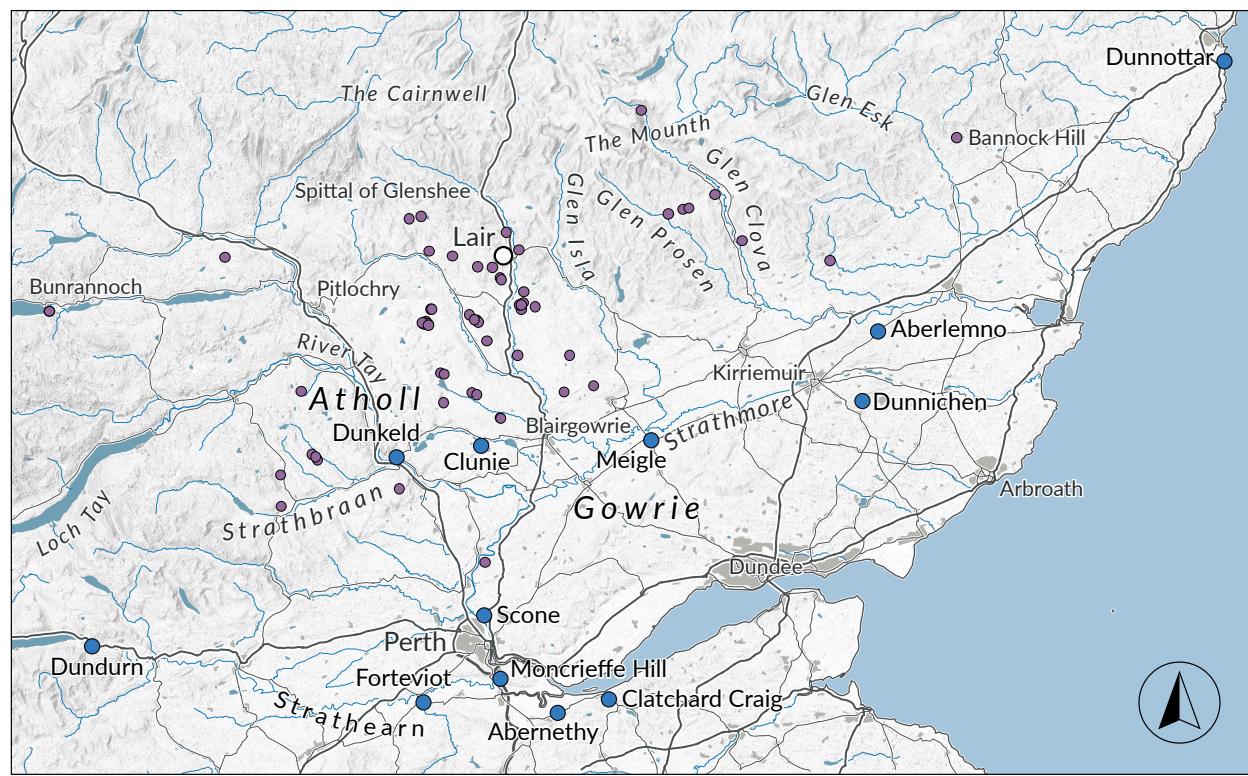
1.5 Historical and political contexts

To define a political history of the uplands of the region in the second half of the 1st millennium AD is not possible: data sources are far too few and too disparate, and concerned only with political and military elites.

Our account relies almost totally on the recent in-depth analyses of Fraser (2009) and Woolf (2007), which both focus on penetrating critiques of the sources in reconstructing their narratives.

Pictishness, Fraser points out, was a Roman idea and not one that contemporary natives might have recognised. Several peoples merged in the 7th century AD to form a unified southern Pictland. By c. 700 AD Adomnán recognised people in both southern Pictland and Fortriu all as Picts and that southern Pictland may have had a single king by that time (Márkus 2017: 103). Prestige goods flowed from the near-continent to northern British leaders at Clatchard Craig and Dundurn (Alcock 2003: 84–87). Some regions established kingdoms, while others remained 'farmer republics' as late as the Norse period, 'small, self-governing areas ... held in varying degrees of subjection, central places to their inhabitants, no doubt, but all but unnoticed in surviving texts' (Fraser 2009: 348).

Atholl (*Athflotla*), probably in the middle course of the River Tay (Figure 1.10) had a king in the 8th century AD and may have had 'pride of place among the southern



KEY

- Early Medieval Power Centres
- Pitcarmick Sites

0

50 km

Figure 1.10 The wider region showing early medieval power-centres and the known distribution of Pitcarmick buildings.

Pictish regions' (Fraser 2009: 102). Borders fluctuated bewilderingly, in reality and in different historians' reconstructions. Brown (2012: 40) defined the kingdom of Fortriu in the 8th century AD as 'stretching from Strathearn (if not the Forth) to the Mounth and including Gowrie and Angus' while Woolf (2007) has argued that it lay north of the Mounth. Control of southern Pictland swung from Pictish to Northumbrian until Bridei, an expansionist king, pushed into Fife and Manau (Fraser 2009: 254), lay siege in AD 680 to Dunnottar on the North Sea coast, perhaps the northern edge of the southern Pictish zone, and in AD 682 to Dundurn at its south-western extremity, and wrested control from Northumbrian paramountcy in AD 685 at Dún Nechtáin. Though Woolf (2006) locates this battle on the River Spey, Fraser (2006, 2009: 216) and Cruickshank (2012) maintain the traditional link with Dunnichen, in Angus, around 25 km east of Glen Shee, and near to the Aberlemno symbol stone which has been interpreted as depicting the battle (Figure 1.10).

Bridei's empire, 'Pictavia', was of many parts and never a single, centralised kingdom (Fraser 2009: 262). It began to be dismantled after AD 717, though with little evidence in southern Pictland of political instability. Onuist, probably a native of the Mearns, his power-centre at Dunnottar, ousted Elphin at Moncreiffe Hill, near Perth, in AD 728 and then at *Castellum Credi*, perhaps Scone (Fraser 2009: 288), pushing back the Atholl and Fortriu kings to become *rex Pictorum* in AD 732. By AD 789 Pictavia was split into northern and southern halves, and 'sharply disunited' (Fraser 2009: 329).

Viking raids had probably begun by AD 793 (Woolf 2007) and with its wealthy church-settlements, including Meigle, south of Alyth (Figure 1.10), which may also have had a royal hall, Pictavia might have been expected to have been targeted. Few such attacks are chronicled, though, perhaps because Pictish interests do not feature in surviving sources. Graham-Campbell and Batey (1998: 102) list four Viking incursions in southern Pictland in the 9th century AD, recorded in the *Old Scottish Chronicle*, but this source is of doubtful merit (Woolf 2007: 88-93). Woolf (2007: 340) argued for 'ceaseless Scandinavian attacks on the heartland of the kingdom', the Tay basin, and for southern Pictish kings 'fighting for their very survival in the heartland of their own kingdom' (Woolf 2007: 341), with the demand for man-power impacting on agricultural production. Márkus has suggested that the impact of the Dublin Norse, and of Haálfdan's great army from the south, probably brought Pictland close to collapse during the 870s AD (2017: 273).

Áed (r. AD 876-878) was the last king described as *rex Pictorum* in the Irish chronicles and subsequent kings were styled *ri Albain* in Gaelic and kings of the Scottas in Old English. Domnall acceded in AD 889, and in the 11 years separating these kings, Pictland and its

Alpínid dynasty 'suffered a political takeover by a Gaelic-speaking group but retained its integrity' (Woolf 2007: 321), a top-down 'regime change' – and linguistic change – with Gaelic dominant by the 12th century AD. Áed's killing may well have been a *coup d'état* by a Gaelic faction driven east from Dál Riata, running from Norse raids in the west. Márkus (2017: 108-9) argues for the systematic absorption of powerful Gaelic leaders into the Pictish body-politic, so controlling to an extent the twin threats of inter-marriage and land grants to Gaels. Religious reform (Woolf 2007: 315) and losses of their estates to secular lords (Woolf 2007: 318) made church-settlements like Meigle all but disappear from the historical record by the 11th century AD.

The 'men of Alba' under Constantin son of Áed were defeated in battle at Corbridge in northern England in AD 918 by the Norse led by Ragnall, but Constantin maintained control of Alba until AD 934 when the English king, Athelstan, penetrated Alba as far as Dunnottar and the Mounth. Constantin, pragmatically, submitted to Athelstan but in AD 937 in alliance with the Dublin Norse invaded England, only to be defeated by the English at Brunanburh. It has been observed that 'early medieval battles almost never happened on borders' (Woolf 2007: 237), and these battles may suggest stability in the Tay heartland, reconstructed from royal itineraries around a 'central transit zone' of Dunkeld, Scone and St Andrews, together with Forteviot and Abernethy in Strathearn, and Clunie, c. 5 km west of Blairgowrie (Figure 1.10). Royal familiarity with Glen Shee might be suggested by the death of one king at, perhaps, Kirkmichael in Strathardle (Woolf 2007: 203). Mael Coluim, who succeeded Constantin around AD 943, was killed 'by the men of the Mearns at Fetteresso' (Woolf 2007: 191), close to Dunnottar, but our understanding of 10th century AD geography is such that 'we cannot tell if the Mearns (Kincardineshire) was a marginal part of the kingdom or part of its heartland' (Woolf 2007: 192): Alcock (2003: 46) saw in this an inland penetration of coastal communities being harried by Norse raids, thus weakening Pictish power. Weakening power is also seen after AD 962 when five Alban kings reigned in quick succession, all but one killed by his own people as past loyalties broke down, and Alba turned in the years around AD 990 to embrace its Gaelic, Scottish identity.

1.6 The Pictish language and place-names in and around Glen Shee

Peter McNiven

This section is based on recent research between Strathardle in eastern Perth and Kinross and Glen Isla in western Angus (McNiven 2014, 2017a and 2017b): place-names in italics are not on current mapping and so are historic. The toponymic, or place-name, evidence for Pictish words can be problematic, but what we have

suggests that Pictish is a dialectal variation within ‘a greater Brittonic continuum’, sharing elements with British south of the Forth and Welsh (Forsyth 2005: 9). Pictish was the most widely spoken language in the 9th century AD in what is now modern Scotland (the other languages being Gaelic, British, Norse and Old English), and yet it was the one that disappeared (Forsyth 2005: 32). In eastern Perth and Kinross, the Pictish language is generally thought to have died out by c. 900 AD, to be replaced by Gaelic, which in turn was replaced by Scots from the 18th century AD. It is not entirely clear why Gaelic replaced Pictish (Woolf 2007: 322-340): surviving documentary evidence written in Scotland starts after the disappearance of Pictish and when Gaelic was at its peak. Whether through the influence of a Gaelic-speaking church, or the fact that Pictish was not written, at least not in the manner of its contemporaries, Old Irish and Old English, or whether through the replacement of the royal dynasty after the defeat of the Picts by the Norse in AD 839, a new Gaelic ascendency arose by AD 900. As outlined, from that date a new style of describing the ruler north of the Forth emerged, not *rex Pictorum* ‘king of the Picts’, but *rí Alba* ‘king of Alba’, and with it, gradually perhaps, the Pictish language was abandoned (Forsyth 2005: 32; Márkus 2017: 264; see Section 1.5).

Place-name evidence for the presence of the Picts in Glen Shee is conspicuous by its absence. However, within the wider landscape of eastern Perth and Kinross, there are about 12 place-names that give an indication of its extent. The place-names suggested to be Pictish or Pictish-influenced are: Alyth; Cally (as in Bridge of Cally); Cammock; Cochrage; Doldy; Dollasbank; Formal; Forter; The Keith; Mount Blair; Rochallie and Strathardle. The details and early forms of these can be found in McNiven (2017a) and while some may have been coined by Gaelic speakers, and so may be Gaelic place-names, many of the elements seem to have been borrowed into Gaelic from Pictish. Gaelic predominates in the area between Strathardle and Glen Isla. Not only is it the original language of most of the settlement names, but it is the language of the majority of relief features such as hill and river-names. Pictish, or at least Pictish influence, is only present in a few, though important, settlement names (Figure 1.11).

The element *pit*, or more properly *pett*, is shared, at the very least, by 350 place-names in eastern Scotland between the Firth of Forth and Moray Firth, including Pitlochry, Pittodrie, Pittenweem, Pittentaggart and Pittendreich. Their general distribution almost matches the distribution of Pictish symbol stones (Wainwright 1962: 117). While there are no *pett*-names in Glen Shee itself, within the wider area are Pitcarmick in Strathardle, Pitlochry in Glen Isla, Pitdrey near Alyth, and Balvarran in Strathardle, which was originally a *pett*-name – *Petverren* in 1641. Pitcarmick, from which the

building form takes its name, means ‘Cormac’s share or portion’ (Nicolaisen 2001: 196; Watson 1926: 409). We do not know who Cormac was, but this old Gaelic personal-name appears early in the written history of Scotland: a holy man called Cormac is the subject of a story in Adomnan’s *Life of Columba*, written c. 700 AD (Anderson and Anderson 1961: 440-47). However, while the element *pett* does indeed have a Pictish provenance, most of the second, or specific, elements are Gaelic. Therefore, just like the Scots language has borrowed Gaelic elements such as *loch* and *glen* to make Scots place-names, so Pictish *pett* was borrowed into Gaelic to make Gaelic place-names. *Pett*-names, then, are probably best seen not as the settlements of Pictish-speakers but rather as the ‘extent of Gaelic-speakers in the 10th century as Alba is beginning to expand out with its core lands between the Dornoch Firth in the north and the Firth of Forth in the south’ (Taylor 2011: 79). However, since *pett* must have been part of the Pictish vocabulary relating to the politics and economics of land-management, as Broun has pointed out, ‘the existence of a *pett* name with a Pictish second element (e.g. Pitpointie in Angus) suggests that they were first coined when the Pictish language was still spoken’ (2015: 53, note 206). The borrowing of *pett* into Gaelic suggests there was continuity of these practices from the Pictish- to Gaelic-speaking eras (Márkus 2017: 270; for more on *pett*-names see PNF 5: 217-225 and Broun 2015: 53-55). Some apparently Gaelic names may have been borrowed into Gaelic from Pictish or show Pictish influence (Taylor 2011). The survival of these names may be due to their continuing importance or distinctiveness.

The vast majority of Gaelic ‘agricultural’ place-names in Glen Shee are of a pastoral nature. Indeed, only five of the 23 names indicating agricultural use have a distinctly arable component. Drumturn may contain Gaelic (‘G’) *sòrn* ‘kiln’ as its specific, meaning in this case a corn-drying kiln. Drumfork contains *G coirce* ‘oats’ and must be an area of arable land and has Mill of Drumturn nearby which could have processed that grain. Milton Knowe, just south of Ashintully Castle, indicates the existence of a former mill, *Moulinuarie* (probably containing *G muileann* ‘mill’) just west of Milton Knowe. Mills were an important source of baronial income and were often resented by the local populace (Smout 1969: 120). The other agricultural place-names indicate areas of grazing or some other aspect of animal husbandry, and most have either the names of animals or names containing grazing specifics. One that does not, however, is *Creag a’ Chaise*, ‘crag of the cheese’. This indicates an area of cheese production and in certain parts of the Highlands cheese was used as part of the rent or tribute in the Middle Ages (Duncan 1975: 152-53). Milking of cows probably took place at *Cnoc na Cuinneige* ‘hillock of the milking pail’. Domesticated animals that can be found in the place-names of Glen Shee include calves at *Bad an Lòin* (earlier *laoigh* ‘calf’) and *Coire an Laoigh*, and ‘goat’ at *Coire Goibhre*, a

reminder that goats were important as a source of dairy produce, meat and wool before the now ubiquitous Blackface sheep was introduced into the Highlands in the 18th and 19th centuries.

Grazing was an important aspect of agriculture in Glen Shee and we can differentiate between grazing near the townships and grazing as part of the system of transhumance at shielings. Along the Shee/Black Water there are a number of place-names beginning with the element *Dal-*; these derive from *G dail* 'water-meadow, haugh'. These floodplains are enriched by nutrients, making them suitable for grazing or growing hay for winter feed. In Glen Shee a number of these became settlements: at *Dalhenzean*; *Dalmunzie*; *Dalnoid*; *Dalrulzion*; *Dalnaglar* and *Dunmay* (*Dalmaya* in 1512). The main shieling region in the study area, based on place-names, seems to have been in the area between Glen Shee and Strathardle. *Ruigh a' Chaorainn*, *Ruigh Chonnuill*, and *Ruigh Dubh* are all to be found here. On the eastern side of the Shee Water is *Meall an Ruighe* 'round lumpy hill of the shieling'. *G ruighe* is the usual term for shieling in this part of Perthshire, but in southwest Perthshire (Strathearn and Menteith) the usual term is *airigh*, and the reason may have much to do with the perception of ruggedness of the slopes. According to Bil (1992), *airigh* conveyed several meanings in Perthshire Gaelic: a shieling or hill pasture, a mountain hut, a shepherd's cottage or a green grove (Armstrong 1825: 15). This last usage was acquired from the green appearance of the grazed pasture, the effect of long-term manuring of small areas of ground around the huts occupied during the summer. *Ruighe*, on the other hand, 'was used to describe a shepherd's house, a hut, a hill pasture where cattle were grazed in the summer months, as well as a shieling' (Armstrong 1825: 475-6). *Ruighe* also meant literally the human arm, or more precisely the fore-arm, and from this possibly originated the meaning of a spreading lower slope on a hill (Bil 1992: 388, 390). One of the places where the livestock might have grazed in this area is *Coire a' Blàrain* 'corry of the little muir or field'. *G blàr* is common in Scotland, and is usually anglicised as 'blair', and in the lowlands can apply to large open stretches of land (PNF 5: 298), and presumably this is how Blair in Atholl and Gowrie were perceived. However, in highland glens *blàr* might apply to a small area of grazing land (see McNiven 2011: 110-16 for *blàr* in Menteith).

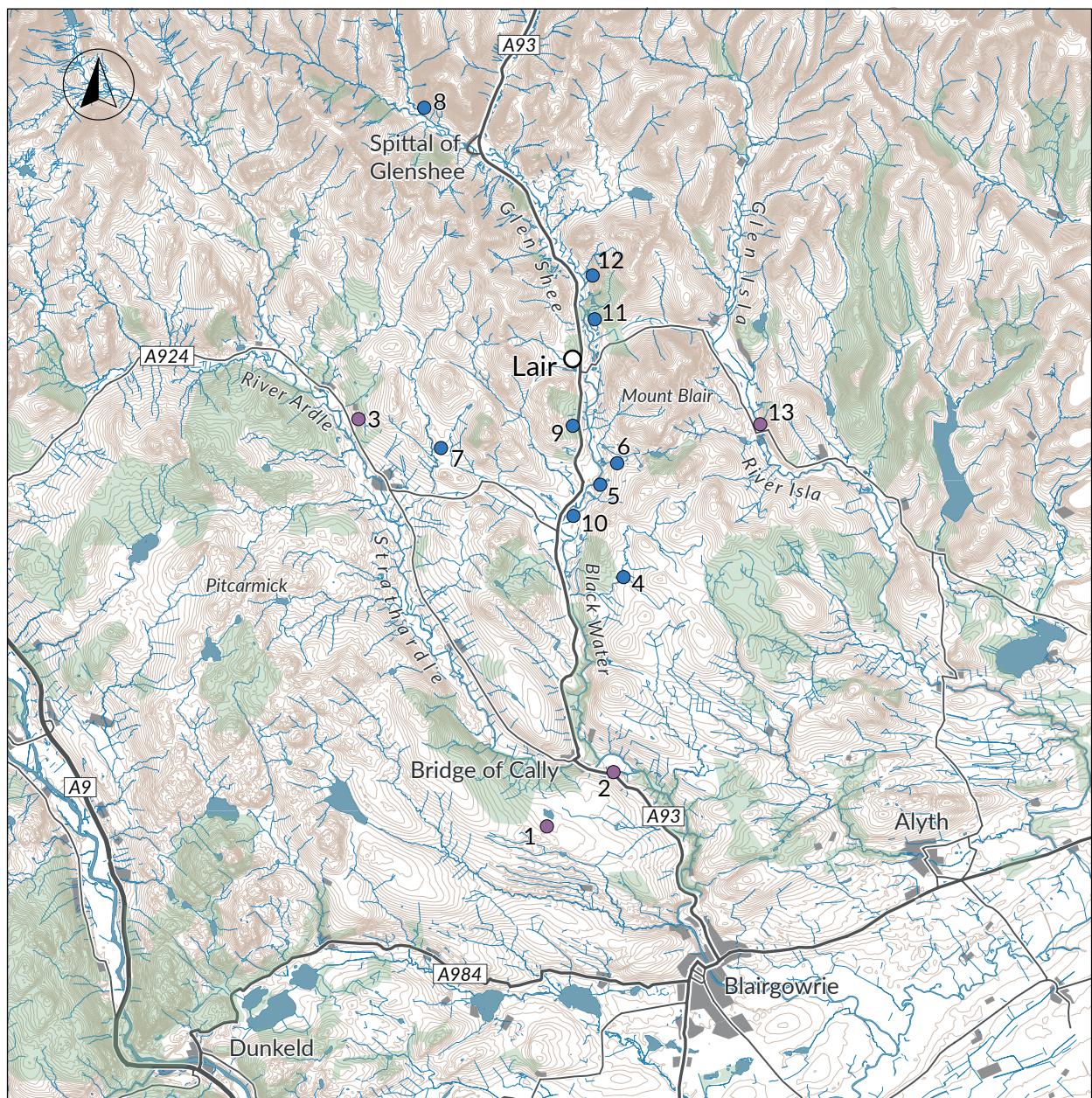
The most numerous Gaelic habitative element in Glen Shee is *G baile* 'land-holding, farm, vill', the Gaelic equivalent of *Sc toun*, and currently exists in five place-names in Glen Shee – *Balnoe*, *Balnauld*, *Sheanval*, and *Coire a' Bhàile* and *Blacklunans*. Stobie shows a number of others including three *Balinaulds* (containing *G allt* 'burn') between Sheanval and Broughdearg, *Balneton* near Spittal of Glenshee, and *Balriach* (containing *G riabhach* 'brindled, speckled or variegated'), north-

west of Lair. Sheanval is in *G seann bhaile* 'old farm', and is on record from 1686, but it is not known why or when the epithet 'old' came to be applied to it unless it was replaced by Spittal of Glenshee on record from 1542. Blacklunans was *Bawclownane* in 1460 (C.A. *Rental* i, 131) and *Balclunas* in 1506 (*Dunkeld Rent.* 76); the specific element appears to be *G cluan* 'meadow' and names on the Ordnance Survey '6 inch' 1st Edition suggest something of the organisation that made up a township. The name applies to an area of arable land on the east bank of the Shee Water/Black Water and contained the farms of Westertown, Burnside, Tomlia, *Croydon*, *Coldrach*, *Drumour*, *Hillyhouse*, *Boreland*, *Hillocks of Boreland*, *Whitehouse*, *Dounie*, *Millton* and *Wynd*. *Boreland* was a farm that provided for the landowner of an area; the produce from that farm went directly to his table, in this case the bishop of Dunkeld. Kerrow, near Spittal of Glenshee, is an indication of land or settlement division, deriving from *G ceathramh* meaning 'quarter', Watson stating that it might mean the 'fourth part of a davoch' (Watson 1926: 236). A *davoch* (*G dabhach*), with a basic meaning of 'vat, tub', is a unit of land measurement and assessment of variable area. Each *davoch* possessed the 'necessary resources for a group of people to survive throughout the year' (Ross 2006: 66), and was a mixture of arable and pastoral land. It was also the basic unit of assessment for army service and was one of the building blocks of the parish north of the Forth (PNF 5, 348). There are no *davoch*-names in Glen Shee and Kerrow is only an indicator that this unit of measurement might have been in place here. Pictish and Gaelic place-names mentioned in the text that appear on current OS maps are show in Figure 1.11.

1.7 The catchment of the Allt Corra-lairige: geology, topography, soils and climate

The catchment of the Allt Corra-lairige above its confluence with the Shee Water is around 3.5 km² in area (Figure 1.12). It faces east, sheltered from dominant westerly winds by a ridge rising to the west to over 500 m OD between Cnoc Feanndaige, Lamh Dearg and Meall Easganan. The steeper gradient hills in the west above 450-500 m OD are underlain by quartz-rich (and so nutrient-poor) Duchray Hill Gneiss, the lower ground by the equally quartz-rich Mount Blair Psammite and Semipelite Formation. Till smears the rounded summits of the watershed above 380 m OD. The north side of the catchment is punctured by a series of broadly parallel sub-glacial meltwater channels from the north, several emerging from the afforested Torr Lochaidh to flow east. The south side of the catchment is punctured by one such channel along the Allt an Lair (Figure 1.13).

Figure 1.13 focuses on the agricultural remains on lower ground (see also Banaszek and Cowley: Section 1.8) where till forms low stream-lined 'whale-back' morainic ridges and comparatively poorly-drained soils

**KEY**

- Pictish or Pictish derived
- Gaelic

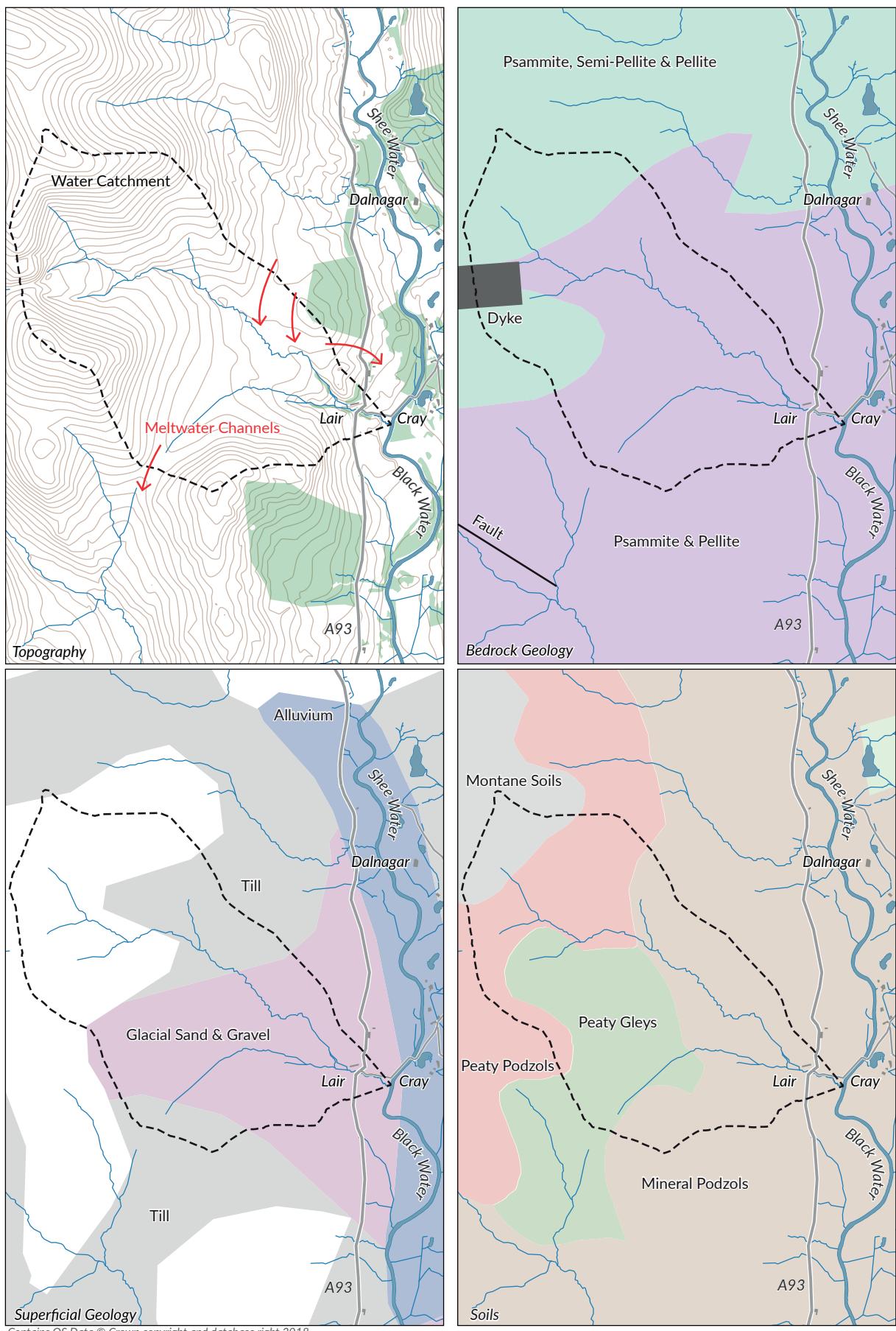
0 10 km

1: Cochrage Muir	8: Dalmunzie
2: Rochallie	9: Dalnoid
3: Balvarran	10: Dalrulzion
4: Mill of Drumturn	11: Dalnagar Castle
5: Drumfork	12: Dunmay
6: Balcklunans	13: Doldy
7: Ashintully Castle	

Figure 1.11: Pictish and Gaelic place-names mentioned in Section 1.6 that appear on current OS maps.

covered by heather (*Calluna*), immediately west of the A93. Till also forms a pair of enormous glacial mounds that almost block the valley, an end-moraine created at a late stage of deglaciation (Figure 1.14). Trains of weakly developed glaciofluvial terraces on the south side of the catchment give rise to thin, nutrient-poor but well drained podsolic soil also covered by *Calluna*.

The gentle lower slopes in the centre of the catchment at 380-390 m OD carry two extensive masses of peat, Basins 1 and 2, both confined basins set below till surfaces. The Allt Corra-lairige is a small 2nd Order stream which falls east over 3.3 km from 550 m OD on Meall Easganan to the Shee Water at 290 m OD (Figure 1.12). Its upper reach on Meall Easganan is initially



Contains OS Data © Crown copyright and database right 2018.

Figure 1.12 The catchment of the Allt Corra-lairige showing the topography, bedrock and superficial geology and soils.

steep with a gradient of *c.* 11 %, becoming gentler below 450 m OD (gradient 1.5 %) before falling into a steep and incised gorge (gradient 10 %) below 370 m OD cut during deglaciation. Relict channels now filled with peat almost encircle Basin 2. Though the natural drainage is eastward, the shallow stream course now flows west and south to join the Allt Corra-lairige. The flow directions of the wet peat-choked stream courses and mires are shown in Figure 1.13. Much drainage takes place through peat pipes, not over the surface. The only locality where a minerogenic floodplain has formed is above the incised gorge. The Allt an Lair is the only tributary.

The heather-clad lower slopes of the catchment between the Allt Corra-lairige and the Allt an Lair are today burnt for grouse. Conifer forest covers the Torr Lochaidh. Birch (*Betula*) and alder (*Alnus*) trees line the incised gorge above Lair Farm. Elsewhere (Figure 1.13) are areas of rough, species-impoverished *Nardus* grassland, and improved pasture on well-drained soils, probably heavily grazed in the recent past by cattle on summer pastures (Section 1.6) and now close-cropped by sheep.

Mean annual temperatures over high ground are less than 6 °C. January is the coldest month when temperatures lower than -2 °C are common. Braemar, 15 km north of Lair and at a similar altitude, has the UK

record for low temperature, -27.2 °C in 1982. The mean temperature at Braemar in January is 0.6 °C. Conversely, in the lee of high ground when warm south or south-westerly airstreams are crossing Scotland, winter temperatures can on occasion reach 15 °C. Snowfall is normally confined to the months from November to April. July is the warmest month, with mean daily maximum temperatures at low altitudes approaching 20 °C. At Braemar the mean July temperature is 12.7 °C with an average 175 hours of sunshine between May and July. This is the wettest area in eastern Scotland with mean annual rainfall >1500 mm, though dry compared with >4000 mm in the western Scottish Highlands (McClatchey 1996).

1.8 Mapping of the field remains

Lukasz Banaszek and David Cowley

The detail of the various themes outlined above can be seen in play in the landscape at Lair. Here, the visible archaeological remains, extending from the banks of the Shee Water to the top of the Allt Corra-lairige, range in date from at least the Early Bronze Age to the late 18th century and also span the various zones of settlement and preservation. Thus, the excavated buildings lie within a complex relict archaeological landscape in which traces of multiple periods of occupation and activity are interwoven. First recorded in outline by the

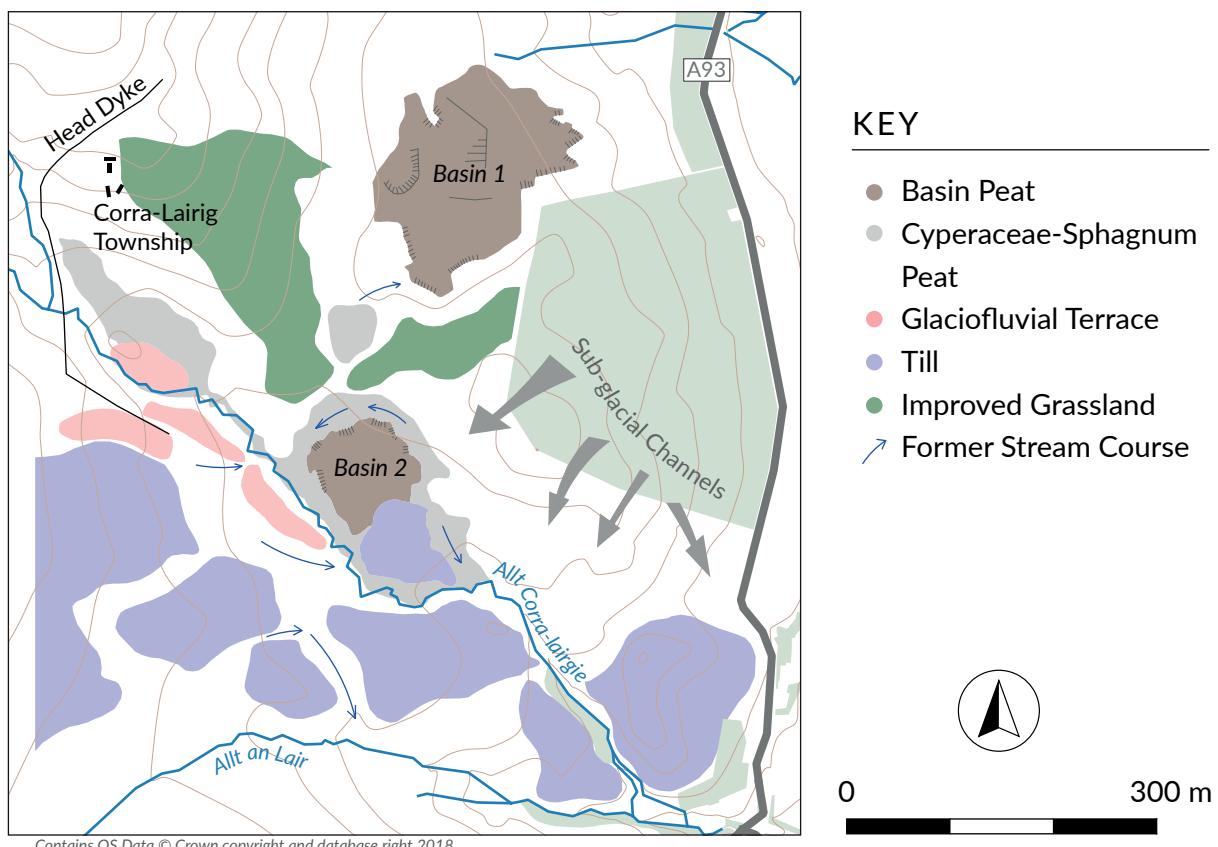


Figure 1.13: The lower catchment of the Allt Corra-lairige.



Figure 1.14 A low-level aerial view, looking south-east, of the setting of the excavations, showing the afforested Torr Lochaidh to the left, the splash of close-cropped grassland bordered by dry Calluna heath, the glacial morainic mounds that 'protect' the Allt Corra-lairige, and Glen Shee (E. Martin: 2014).

RCAHMS survey in 1987-8, these have been re-mapped in detail by Historic Environment Scotland (HES) to better understand the field remains and in particular the character of the extensive cultivation traces only patchily visible on the ground.

Source data and survey methodology

The mapping presented here was completed in 2018, and draws on remote sensing (RS) data, informed by both the RCAHMS survey (1990) and topographic mapping while the excavations were ongoing (Section 2.2). Two RS dataset types, Airborne Laser Scanning (ALS) (Scottish Remote Sensing Portal 2018, <https://remotesensingdata.gov.scot/>) and aerial imagery were used, producing an outline plan, aspects of which were explored during a field visit in April 2018. The ALS data was collected between March 2011 and May 2012, commissioned collectively by the Scottish Government, Scottish Environmental Protection Agency and Scottish Water (available under Open Government licence v3.0). With a last echo density of 1.49 pts/m², which provides a point spacing of 0.82 m, the ALS data are not high-resolution, and is available for only part of the mapped area (Figure 1.15). The ALS point

cloud was processed to produce a digital terrain model (DTM) with a 1 m spatial resolution. Thereafter, the Relief Visualisation Toolbox (Kokalj *et al.* 2011; Zakšek *et al.* 2011) was used to produce visualisations for interpretation and mapping in a Geographical Information System (GIS) environment, drawing on recent experience gained by HES in working with ALS-derived visualisations during survey of Arran (Banaszek *et al.* 2018). The aerial imagery comprises orthophotographs taken in 2008 and 2011 and supplied to HES through a Service Level Agreement administered by the Scottish Government, and oblique aerial photographs taken by RCAHMS in 1987-8 and by HES in 2015-6. The orthophotographs comprise tiled imagery at 25 cm ground sampling distance. Selected oblique images from 2015-6 were rectified for mapping purposes, while the 1987-8 images were used primarily to inform interpretation. The desk-based mapping raised some detailed questions of interpretation that required field assessment, undertaken in early 2018. Field observation concentrated on the topographic and chronological relationships between certain buildings and the cultivation remains, as these offered an opportunity to establish any phasing visible in the field remains.

Land use and the (in)visibility of archaeological features

In broad terms, the surveyed area can be divided into three general land-use types (cf. Section 1.6; Figure 1.15), the disposition of which conditions both differing patterns of archaeological visibility, and different patterns of potential for preservation of archaeological remains. The first land-use type area, lying to the east of the A93 (Figure 1.15: A), where the ground falls to the Shee Water, has been enclosed since at least the early 19th century and is under a mixture of improved and semi-improved pasture. There are also patches of what was once managed woodland along the river. Second, the area west of the A93 (Figure 1.15: B) is predominantly rough grazing heathland, mainly ling heather (*Calluna*), and characterised by a patchwork of different ages of heather cover and rough grass. The northern edge of the area falls under the third type of land use, a dense coniferous plantation established in the 20th century (Figure 1.15: C), clothing the upper slopes and summit of the hillock known as Torr Lochaidh. Whereas visibility in the unenclosed ground is moderate or good for the heathland, and perfect for the improved pastures, the plantation has not been subject to ground observation and the specification of the general purpose ALS survey did not produce an archaeologically useful DTM under the dense canopy. With the exception of the plantation, this broad pattern of land use persists at least from

the 19th century, as shown on Sheet XXXIII of the 1st Edition of the Ordnance Survey 6-inch map (Perthshire 1865-7).

As outlined above, the pattern of historic and modern land use has had a significant impact on the survival and visibility of archaeological remains. A fourth zone of preservation can be added to those identified already (RCAHMS 1990: 1; Stevenson 1975). This is the forestry plantation, the planting of which is not only catastrophically destructive but has proved impenetrable to the survey techniques deployed to date. Thereafter the same three zones of preservation can be traced out. Firstly, there are areas that have been under cultivation in the last 50 years, characterised by smooth surfaces, and where any earlier remains have been ploughed flat. These areas all lie in the main valley east of the A93, and generally represent the poorest zone for visibility of medieval and earlier archaeological features. Being largely under permanent pasture, there is no real scope for the discovery of buried features through vegetation proxies on aerial photographs. Secondly, there is a zone of surviving medieval and post-medieval rig-and-furrow (sometimes of multiple phases), field banks and clearance cairns. This lies partly on the slopes east of the A93, where the continuity of the 19th century and more recent cultivation breaks up northwards into discrete patches, and partly in



Figure 1.15 Orthophotograph documenting current land use and showing the extent of ALS data (© Historic Environment Scotland (Source: orthophotographs (2008) licensed to Historic Environment Scotland for PGA, through Next Perspectives™)).

the heather moorland to the west. Below the A93 the RS data offer an exceptionally clear view of the archaeological features, with little noise from irregular vegetation, allowing even the slightest topographic anomalies to stand out in the ALS derivatives. In the heather moorland to the west of the A93, however, the definition of the results is softened by the character of the vegetation. While the traces of cultivation in this zone must have obliterated visible traces of many early features, remarkably, fragments of a group of roundhouses survive amongst the cultivation rigs on terraces overlooking the Shee Water. As with the survival of the Pitcarmick buildings to the west of the A93, their survival as earthwork features depends on the intensity of later cultivation. The third zone of unimproved heather moorland beyond the rigged zone theoretically has the highest potential for preservation of visible prehistoric remains, and indeed for structures of early medieval date. However, in practice this pattern is blurred at Lair by varying intensities of later cultivation and the survival of so many earlier features in the rigged zone.

A further factor that needs to be taken into account is that visibility itself is not even across the heather moorland, it varying with the pattern of management, in which the heather growth is burnt back in rotation over a period of years to create a complex mosaic of bare ground, short young growth and mature bushes. This is evident when comparing the oblique aerial photographs taken in 1987-8 to those from 2015-6. In effect, this type of heather management creates a parallel mosaic of differential archaeological visibility that changes from year to year. This is most likely to have an impact on the extent to which shallow furrows of cultivation and slight remains of buildings can be observed, either in the RS data or in the field, and should be kept in mind as a commentary on the extent of the mapped archaeological remains, particularly around the upper margins of the rigged zone.

Survey results

The HES mapping attempted to account for all archaeological remains identified during earlier survey by RCAHMS and the Glenshee Archaeology Project. It also identified additional, previously undocumented features (below), providing mapping of individual rigs, banks and clearance cairns for the first time. This illustrates the cumulative nature of survey and how the results depend on the specification of the survey and the prevailing conditions on the ground. This is underlined by the discovery of previously undocumented remains in an area that has already been subject to a relatively systematic survey on the ground in 1987-8. These new monuments include the remains of several buildings (Figure 1.16: 17 and 19) within the main scatter of features, while a few possible shieling huts (Figure

1.16: 25-27) were also detected on the south-western edge of the study area. There are, however, a handful of small cairns noted during the earlier survey that it has not been possible to account for, and some other known features were barely visible in the RS data (e.g. Figure 1.16: 16) and confidence in their interpretation depended on the field visit.

Nevertheless, the new mapping confirms the broad patterning of remains previously documented by RCAHMS (1990). The ring-cairn is assumed to be of Early Bronze Age date and the roundhouses may be Middle Bronze Age or Iron Age in date (Cook and Dunbar 2008; Rideout 1995). The rectangular buildings within the survey area include structures that can comfortably be classified as Pitcarmick buildings (Figure 1.16: 3-5 and 12, 14, 20), with others that are round-ended but less clearly belong to that group (Figure 1.16: 1-2, 6, 7-8, 9, 10). This conforms to a broader pattern of generally sub-rectangular buildings of medieval and post-medieval date in similar upland areas (Atkinson 2016; Cowley and Harrison 2001). The scatters of small cairns have often been assumed to be of prehistoric date, but in reality clearance on stony soils is a timeless function of agriculture and individual heaps may date from any period from the Late Neolithic to the post-medieval (e.g. McIntyre 1998). Indeed, what we perceive as groups of cairns may have been formed piecemeal through field clearance at different periods. The same may be true of the disarticulated lengths of field banks, though some form small enclosures adjacent to buildings and presumably formed small yards within discrete farmsteads (Figure 1.16: around 6 and 7-8). None of the rig in the study area is well developed, and is characterised by a flat profile separated by shallow furrows. In some cases, close inspection reveals a pattern of alternating deeper and shallower furrows, suggesting that broader rigs some 3-5 m across have been split into narrower strips. This is a pattern that can also be recognised widely and is identifiably a medieval and later phenomenon (Cowley and Harrison 2001; Halliday 2001).

The HES mapping was stimulated by the question of whether any of the field remains, in particular the rig, could be of early medieval date and related to the periods of occupation revealed by the excavated buildings (Section 2.4) or activity identified in the pollen analyses (Section 2.6). There are general reasons to demand a high standard of proof when identifying early medieval or prehistoric cultivated surfaces. The character of any field surface is inherently fragile and prone to radical modification by re-cultivation in later periods. Indeed, pragmatic decisions by farmers will tend to selectively seek out areas that have been 'improved' by earlier cultivation. On one hand this is witnessed by the incidence of rigs woven through the cairns and banks around many hut-circle groups in north-east Perth

and Kinross (e.g. Drumturn Burn - ID29005; RCAHMS 1990: 47-9), and on the other by the identification of split rigs in many post-medieval rig-systems. In principle, there is nothing in the character of the rigs here to distinguish them from those in systems around post-medieval townships and farmsteads elsewhere. Furthermore, the interpretation of the ALS data and targeted field observation, confirmed also by the excavations, demonstrates that the rigs overlie all the buildings with which they are juxtaposed (Figure 1.16: 1, 2 and 12). On balance, there are no grounds to suggest that the rig-system here is other than post-medieval in date. The more general context for its cultivation is probably as outfields expanding out of the main valley as the population grew prior to the reorganisation that created the pattern of modern farms. Elsewhere, this sort of expansion carried more permanent settlement onto shieling grounds, represented by the secondary settlement zone discussed above and also seen in the place-names of some deserted townships, such as Cro na h-Airighe in Gleann Beag above the Spittal of Glenshee (ID29611; RCAHMS 1990: 119-20, no. 14). The presence of possible shieling huts at Lair is probably evidence of a similar history. At Lair, the process of expansion eventually leap-frogged these outfields to found a new farmstead by AD 1700 at Corra-lairig (ID29511), only for this to be abandoned by the mid-19th century (RCAHMS 1990: 151-2, no.16).

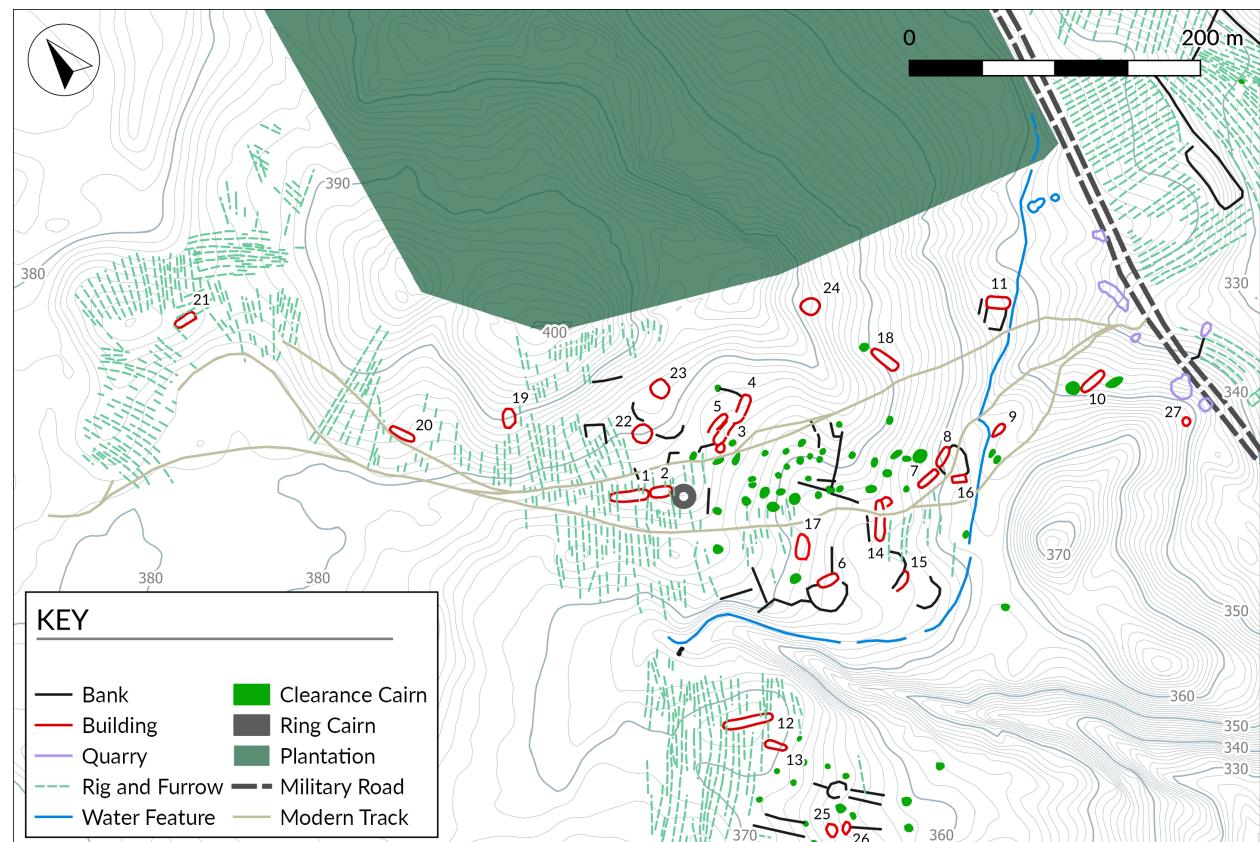


Figure 1.16 Features mapped from aerial photographs and Airborne Laser Scanning data (© Historic Environment Scotland (Source: contour data derived from DTM (2018) © Bluesky International Limited & Getmapping Plc.)).

A palimpsest on the 'high-tide' mark

The buildings at Lair sit in a landscape littered with the remains of human activity over many millennia, a locale that has been visited and revisited at intervals over time producing a sometimes chaotic palimpsest of archaeological features (these are described in greater detail in Section 1.9). Today this landscape lies beyond the upper altitudinal limit of intensive arable land use, though obviously vulnerable to silviculture. However, in preceding centuries it lay on a 'high-tide' mark for settlement and land use, evidenced by the surviving remains of several visible periods of prehistoric, early medieval and later occupation. Whether this was continuous or episodic is difficult to demonstrate conclusively (see Sections 4.2 and 4.3), but is perhaps most likely to represent a margin exploited at varying intensities as differing patterns of land use or increases in population demanded. Pressure from increasing population was clearly a factor in the post-medieval period, and perhaps when it was colonised in the early medieval period too (Sections 4.5 and 4.12). The rash of undated buildings and enclosures, however, raises the possibility that these were just two of a series of times when attempts were made to take this area into more permanent occupation. In this context, the landscape at Lair is far from unique and is representative of extensive areas of surviving relict, multi-phased,

palimpsest landscapes not only in Glen Shee and Strathardle, but across eastern and central Scotland (Carver *et al.* 2012; Cowley 1997; RCAHMS 1990). These all have in common the recurrent juxtaposition of prehistoric, early medieval and post-medieval remains, in landscapes characterised by successive overprinting and reuse, with consequent implications for long-term processes that drive variable survival, visibility and selective destruction.

1.9 Key sites in the study area

Prior to the Glenshee Archaeology Project, the complex of extant remains at Lair (Figure 1.16) was recognised as an important example of many other multi-period sites in the glen (RCAHMS 1990 *passim*). It extends from the valley floor on the west bank of the Shee Water at NO 145 635, and rises west some 300 m upslope to the small township, or *fermtoun*, of Corra-lairig (ID29511) at c. 430 m OD, skirting around the east and south flanks of Torr Lochaidh, the largely afforested hill north-west of Lair steading (NO 142 633). The assemblage of monuments that make up the complex includes at least two notable early prehistoric cairns, the most impressive being the ring-cairn (ID29510) built on the edge of a narrow terrace at c. 370 m OD and overlooking lower ground to the south and west, but overlooked from the north and east. The cairn (Figure 1.5) is roughly circular, c. 15 m in diameter over an outer kerb of boulders, a section of which on the north-west has been robbed and incorporated into one of the later buildings (ID29509). At least 26 stones of the kerb survive *in situ*, the largest measuring up to 1.2 m in length: the inner court, however, which lies eccentric to the outer kerb is c. 4 m in diameter, and less well defined with only one boulder clearly *in situ*, suggesting the centre of the cairn may have been excavated at some time. The second cairn (ID29505), which is c. 10 m in diameter and defined by an arc of seven surviving kerb-stones, is situated upslope at c. 410 m OD on a south-east facing slope c. 200 m south-east of Corra-lairig township.

The other prehistoric component of the complex is represented by roundhouse settlement and probably by some of the small cairns scattered around them. Within Glen Shee itself, on the east flank of Torr Lochaidh, within a group of seven roundhouses (ID29514) and a burnt mound (ID29523), several are just above the glen floor at c. 320m OD and represent a rare survival in this topographical setting. Six are 7-9 m in internal diameter, while one is c. 11 m. Another three are situated on the southern flank of Torr Lochaidh (ID29508; Figure 1.16: 22-4), two lying to the north of the ring-cairn and occupying a west-facing slope on a low rise; one is c. 9.5 m in internal diameter, the other c. 12 m, the latter partially levelled into the slope with a south-east entrance. The third lies c. 130 m to the east of these and is located on a narrow terrace on an

east-facing slope, it is c. 9 m in internal diameter. Cairn-fields, comprising small cairns c. 3-4 m in diameter, are recorded both north (ID29499) and south (ID29508) of the Allt Corra-lairige.

Two important groups of Pitcarmick buildings at Lair have been identified (Figure 1.16). The first is the complex of three buildings (ID29437; RCAHMS 1990: 150) defined by low, stony banks, c. 30 m east of the ring-cairn, at 370 m OD (Figure 1.16: 3-5). The best-preserved is c. 23 m in overall length and varies in width from up to 6.5 m at the west end to c. 4.5 m at the east end. Its interior was found to be slightly scooped with possible opposed entrances and a small D-shaped enclosure attached to its south-west corner (see Chapter 2: Building 3). It was interpreted as overlying the building to the north, which measured c. 23 m by c. 5 m overall (Chapter 2: Building 5), and was set end-on to the third building (Chapter 2: Building 4), which measured c. 17 m by up to 5 m overall.

The second group (ID29495), on a low knoll on the south-west side of the Allt Corra-lairige (Figure 1.16: 12-13), also comprises three buildings defined by low banks enclosing shallow depressions. Two are set end-on to each other, although their stratigraphic relationship was unclear (RCAHMS 1990: 149). The larger, to the south-east, measures c. 19 m by 6 m overall, and that on the north-west c. 15 m by 6 m (Chapter 2: Building 12). The third building, 15 m to the south-west, is c. 14 m long and c. 4.5 m wide (Chapter 2: Building 13).

These two groups, however, are not the only Pitcarmick buildings identified in the catchment. One (ID29513; Figure 1.16: 20) measuring c. 18 m by 5 m lies on a low terrace overlooking poorly-drained ground to the south with another possible smaller example to the north-west (Figure 1.16: 21). Another lies on an east-facing slope on the far side of the catchment c. 750 m west-south-west of the ring-cairn (ID29446); it measures c. 19 m in length by c. 6 m in width overall, and there are seven clearance cairns nearby.

In addition to the Pitcarmick buildings, the original RCAHMS survey recorded a wide range of other buildings in the area, most of which were interpreted as townships, farmsteads and shieling huts, and assumed to be of later date (1990: 150). The most obvious of these is the township of Easter Lair (ID29436) just above the valley floor at 300 m OD, and comprising at least 20 buildings with enclosures, pens and two kilns, but there were also smaller examples, such the township of Corra-lairig (ID29511) contrastingly set at 420 m OD in a slight hollow in the southern flank of the spur forming the northern boundary of the catchment (Figure 1.8).

In their abandoned states, these townships were clearly part of the post-medieval settlement pattern, but there

were also other buildings which could not be attributed dates with any such confidence. The first of these lay directly to the north-west of the ring-cairn (Figure 1.16: 1-2), comprising the poorly-defined remains of two buildings (ID29509), aligned north-west to south-east and set end-on to each other. That nearest the cairn (Figure 1.17; Chapter 2: Building 2), the upper of the two on the gentle slope, measures c. 14 m by up to 6 m overall with its south-east end being particularly well-defined by a row of boulders robbed from the kerb of the ring-cairn. The lower structure (Figure 19; Chapter 2: Building 1) measures c. 26 m by up to 6.5 m over ill-defined banks. Entrances in the south-west side were noted on both buildings. Rather more shadowy as field monuments were a possible building crossed by the track leading up from the road c. 125 m south-east from the ring-cairn (Figure 1.16: 14; Chapter 2: Building 14), and a second possibly with a slightly sunken interior on a terrace on the east flank of the southern spur of Torr Lochaidh (Figure 1.16: 18).

Other buildings could be more conventionally classed as elements of farmsteads, which in the RCAHMS terminology were defined as having between one and five buildings with at least one attendant enclosure. One of these farmsteads (Figure 1.16: 7-8, 16) lies adjacent to the track, c. 160 m south-east of the ring-cairn, at c. 360 m OD (ID29498) and comprises three buildings with an irregularly-shaped enclosure. The best-preserved of these (Figure 1.18; Chapter 2: Building 7) 'superficially resembles' a Pitcarmick building (RCAHMS 1990: 151) in the sense that it has rounded ends and measures overall c. 15.5 m by up to 4.5 m, although in contrast to most other Pitcarmick buildings it appeared to have a stone faced wall-footing. The second building is levelled into the south-facing slope, measures c. 14 m by up to 5 m overall and adjoins a roughly rectangular enclosure that may include a third building on its south-west side. This farmstead, however, is only one of three or four in the vicinity, though most of the others comprise only a single building and enclosure (Figure 1.16: 6, 11 and 15).

The buildings vary considerably in scale and morphology, as do the enclosures. One single compartment building (ID29496) with a rounded west end and entrance in the south wall, measures c. 8 m by 4 m (Figure 1.16: 6; Chapter 2: Building 6), and adjoins to the south a sub-circular enclosure measuring c. 23 m by 18 m internally. Another single compartment building (ID29502) is clearly more rectangular and measures c. 14.5 m by 4.5 m overall (Chapter 2: Building 11). It adjoins a rectangular enclosure measuring c. 15 m by 12 m internally, which lies immediately adjacent the lade that traverses the east flank of Torr Lochaidh, though the stratigraphic relationship between the two cannot be determined.

In addition to these other features are post-medieval shieling huts and bothies, as well as fragments of

several field banks and more extensive traces of rig and furrow. The rig on the lower slopes of Torr Lochaidh appears largely unenclosed, but the rig-system around Corra-lairig includes a head-dyke and several other boundary dykes.

Finally while for much of its route, Caulfeild's military road through Glen Shee, built over 1748-50, is beneath the modern A93, it does occasionally survive as an earthwork as in the well preserved stretch at Lair, which includes a number of small quarries (Figure 1.16).

1.10 Research objectives

The overarching research aim of the project was to better understand the development of the Pitcarmick building tradition and further explore the function of the buildings in the context of their landscape, environmental and economic settings. A multidisciplinary team was engaged with a series of defined targets: to excavate and interpret the archaeological evidence (Sneddon and Strachan: Chapter 2); investigate environmental and economic change (Paterson and Tipping: Chapter 2); apply new techniques to further explore the landscape archaeology at Lair (Banaszek and Cowley above); date the excavated sites by AMS ^{14}C dating and refine their chronology by Bayesian modelling (Krus and Hamilton: Chapter 2); analyse the recovered artefactual and eco-factual remains to understand human activities and building functions (Campbell; Clarke; Hall; Johnson; McLaren; Smith; Wright: Chapter 3) and provide a place-name history (McNiven: Section 1.6). While annual research objectives were developed to guide the excavation



Figure 1.17 An aerial view of Lair from 1978 showing the main group of Pitcarmick buildings and related buildings beside the ring-cairn
(© Crown Copyright: HES A55314).



Figure 1.18 One of the smaller buildings at Lair (Building 7) with associated enclosures (D. Strachan: 2011).



Figure 1.19 A larger building (Building 1), closest to the ring-cairn, with stones robbed from the cairn kerb and incorporated into the rounded end (D. Strachan: 2011).

of specific structures, the strategic objectives for the project were explored under eight general headings with a series of dependent questions:

1. The chronology, phasing and sequence of construction of Pitcarmick buildings at Lair and establish any temporal relationship between them. Are the groups of buildings contemporary or do they represent sequences of construction over time and, if so, can these be defined? Do groups of Pitcarmick buildings at Lair represent single farm units or do they represent a collection of farm units comparable to the townships of the pre-improvement period?
2. The nature and function of individual buildings. Are differences in size and form indicative of function? Could domestic activity be identified? Did some buildings have specialist functions (e.g. smithing or craft production)? Were Pitcarmick buildings at Lair byre-houses? And what might these factors imply about the origin of this tradition?
3. Evidence for reconstruction, repair, maintenance and abandonment. Were individual structures rebuilt? Did they have longevity? Were they deliberately destroyed or did they decay through neglect? And when were the Pitcarmick buildings at Lair abandoned and why?
4. The relationship of the archaeological structures to their wider landscape context. Is there evidence for the agricultural economy beyond the archaeological structures themselves? Can this be related to the evidence for field-systems, clearance cairns and land boundaries?
5. The relation of the Pitcarmick buildings at Lair to contemporary developments in the lowlands, and their toponymic, political and socio-economic contexts.
6. The relation of the Pitcarmick buildings at Lair to those at Pitcarmick (Carver *et al.* 2012).
7. The relationship of the Pitcarmick buildings at Lair to the archaeological remains of earlier periods. Why was this location chosen for re-occupation in the early medieval period? Is there evidence of continuity of settlement?
8. The social and cultural context of Pitcarmick buildings. Do they represent particular ways of living, or a cultural tradition which is distinct from other parts of Scotland in the 1st millennium AD? Are biases in preservation or exploration in other regions biasing our perception of this tradition?