

## Excavations at Pluscarden Priory, Moray

Finbar McCormick\*

with contributions by Paul Buckland, Stephen Carter, Ruby Cerón-Carrasco, Richard Fawcett, Barbara Ford, Dom Ambrose Flavell, Sheila Hamilton-Dyer, Daphne Home Lorimer, Coralie Mills, Charles Murray, Thea Gabra-Sanders, J B Pennington (with J P Middleton, C Nicholson & A K G Jones) & P Skidmore

### ABSTRACT

*This report, prefaced by a brief history of Pluscarden Priory, and by a description of the church, describes excavations on the western side of the Priory. Features investigated include the western end of the nave, a series of burials, a stone-lined pit containing a rich organic deposit, and walls associated with the medieval monastic complex. The excavation was arranged and funded by Historic Scotland.*

### INTRODUCTION

The site was excavated by what was then AOC, Historic Scotland, in August and September of 1990 in anticipation of the building of a residential building on the presumed site of the west claustral range of the monastery. The excavation was organized and financed by Historic Scotland. The report begins with brief descriptions of the history of the foundation and of the architectural development of the church.

### OUTLINE OF THE PRE-REFORMATION HISTORY OF PLUSCARDEN PRIORY, 1230–1560

Dom Ambrose Flavell OSB

The Valliscaulian Order was a late expression of the eremitical ideal which swept across Europe c 1075–1200. Unlike similar ascetic movements in France at this time, such as the Grandmontines, it never enjoyed great celebrity or diffusion. Only 21 houses are listed by J A P Mignard, the 19th-century historian of the Order, and although Val des Choux retained its independence until 1761 there would appear to have been no new foundations after c 1255 (Folz 1959, 100).

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The three Scottish houses (Pluscarden; Beaulieu, Inverness-shire; and Ardoch, Argyll) are very much outliers of a fairly close-knit group centred on the mother-house of Val des Choux (Côte d'Or), which is situated about 20 km south-east of Chatillon-sur-Seine. Besides the Burgundian houses, there were two in Normandy, one of which served as a hospice for monks travelling to or from Scotland. Another, Remonvaux, was established c 1210 in Lorraine which was then still a German duchy of the Holy Roman Empire.

There is a contemporary description of the early Valliscaulian monks in Chapter 17 of Jacques de Vitry's *Historia Occidentalis* (Folz 1959, 104). It records a visit made in 1216, when the monks were still following the austere rule drawn up by Viard and ratified by Pope Innocent III in 1205/6. A copy of this Bull has been preserved in the Chartulary of Moray in connection with Pluscarden (Macphail 1881, 193) but the original rule had been somewhat mitigated before the Scottish foundations, bringing the fledgling Order more into line with Cistercian practices without altogether abandoning the Carthusian customs and ideals of their founder, Viard, who had received his monastic training as a lay brother at the Charterhouse of Lugny. The resulting legislative text, known as the *Ordinale*, gives precise details of the liturgy, duties of officials and customs of the Order and allows some degree of reconstruction of monastic life at Pluscarden under the Valliscaulians (1230–1454).

Folz (1959, 95; see also Vermeer 1954), analysing the sources of the *Ordinale*, has shown that the bulk of the text is drawn from the *Officia Ecclesiastica* (Choisselet & Vernet 1989) of Cîteaux (written before 1137), modified in places by statutes taken from the Carthusian *Consuetudines Guigonis* (c 1127; Guigues 1984). Very little of the document is peculiar to the Valliscaulians. The most evident departure from Cistercian practice would have been the little cells (probably a subdivided dormitory on the Grandmontine model: Hutchison 1989, 93, 338–9) and private gardens which the brethren were free to cultivate in the afternoons when not otherwise engaged. This preservation of certain conspicuous elements of the Carthusian ideal, together with the small size of the community (the Bull of 1205/6 specified that no Valliscaulian house was to have more than 20 monks, including lay brothers), would have served to distinguish Pluscarden from her Cistercian neighbour at Kinloss, 10 km away to the north-west. It is surely significant that Walter Bower, Abbot of Inchcolm, should have mistaken the three Valliscaulian houses for Carthusians in his *Scotichronicon* of 1437 so soon after the foundation of the first, and only, Scottish Charterhouse at Perth in 1429 (Beckett 1988, xi; Bower 1987, vol 8, 275).

Pluscarden was a royal foundation, taken under the protection of the local bishop in 1233, the King in 1236 and the Pope in 1263. In most of the pre-1275 charters, and on the conventual seal, the house is generally referred to as *Vallis Sancti Andree* which was probably its original name before variants of the place-name Pluscarden became the norm. The dedication of all Valliscaulian monasteries was to Our Lady and St John the Baptist (Birch 1900, 94).

King Alexander II had generously endowed the priory with lands and holdings scattered along the coastal strip from the River Ness to the Spey: the land and forests of Pluscarden and Auchtertyre, fishing rights (for salmon) on the Spey and Findhorn; the mills of Pluscarden, Elgin, Dunkinedir, Molen, Forres and Dulpotin with their multures; the church of Dores with its lands, tithes, offerings and rights, and tithes on all the iron extracted from mines in the forest of Pluscarden. The extent of these endowments is important, as the Bull of 1205/6 had specified that the Valliscaulians were to live on their revenues. Unlike the Cistercians they did not have an army of lay brothers to bring wild places into cultivation: their monastic economy depended on rents, tithes and payments in kind. Some indication of the relative prosperity of Pluscarden is given by Bagimond's Tax Roll of 1274: Beaulieu and Ardoch are each set down for £200, Pluscarden for £533 (Macphail 1881, 80).

There are no contemporary annals. The so-called *Liber Pluscardensis* is a history of Scotland (heavily dependent on Bower, 1987; and Fordun, 1871–2) written at Pluscarden in 1461 under the patronage of the Abbot of Dunfermline. The author was not a monk but a secular cleric named Maurice Buchanan, and the book contains no internal monastic sources. A history of Pluscarden before the 15th century, from documents alone, would inevitably be heavily weighted by records of litigation over multures (1300, 1367, 1370, 1390) and similar disputes. One of the few events on record is that the priors of Pluscarden and Beaulieu attended the Scottish parliament, at Birgham, on 17 March 1289/90.

Tradition assigns two fires at Pluscarden to the 14th century, one in 1303 when Edward I's army marched through Moray, and the other at the hand of Alexander Stewart, Earl of Buchan, the Wolf of Badenoch, in 1390. That there was a major fire at some time about the late 14th or early 15th century is evident from the fabric of the church; the fact that the damage to the transepts was never fully repaired suggests declining fortunes.

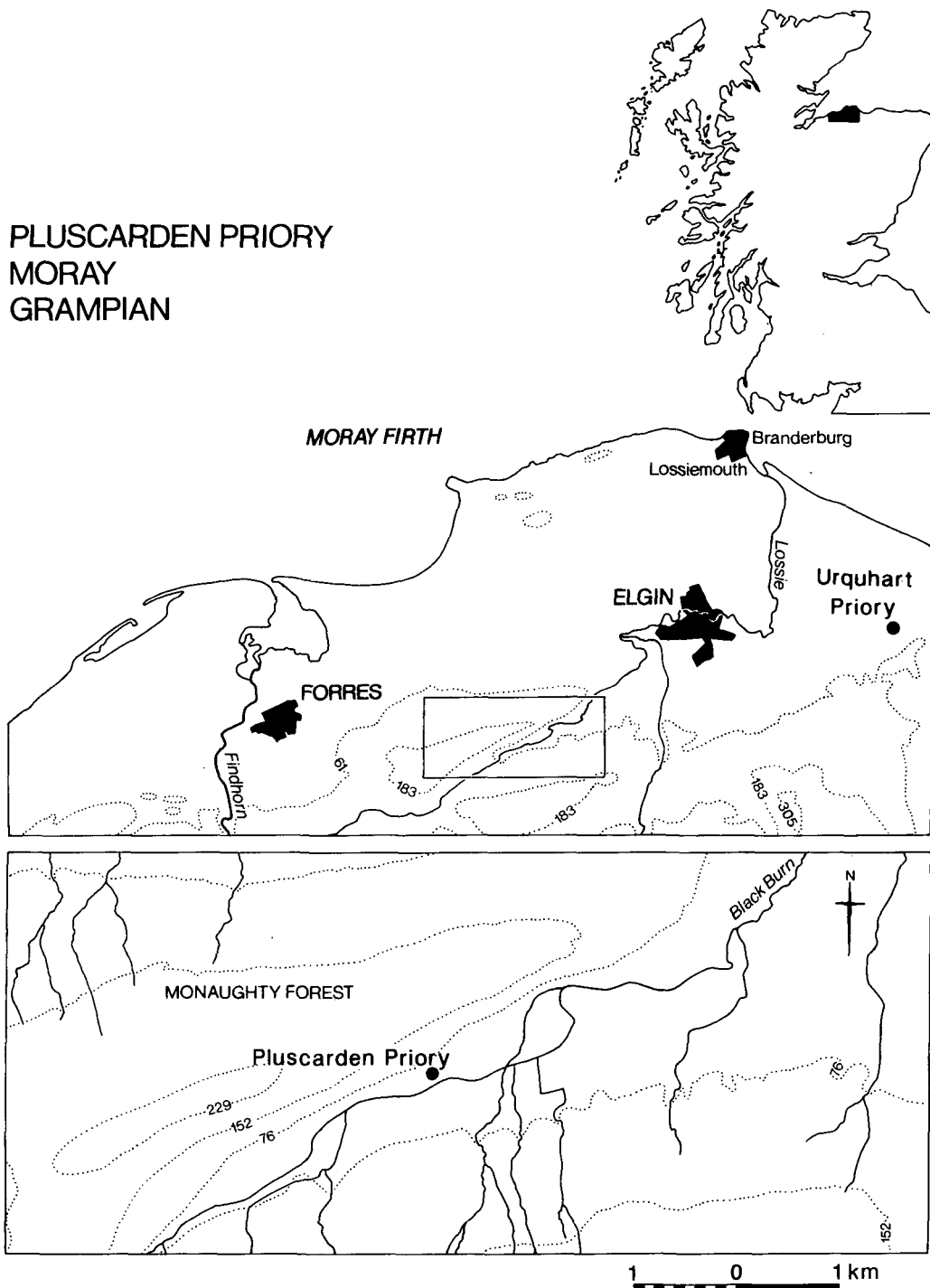
Prior Thomas Fullonis resigned in 1398 after 21 years in office. His letter to the bishop speaks of ruling through hard times and the same document contains the decree of election of Prior Alexander (1398–c 1417) who is charged 'to repair the ruins of the church and dwelling' (Macphail 1881, 217). Evidently this work was not completed for, at the union of Pluscarden and Urquhart Priory in 1454, the Abbot of Dunfermline's delegate reported that he found Pluscarden in great need of repair; the result of almost 60 years of neglect was that the vaulted roofs of choir and crossing threatened to fall (Webster 1948, 197).

By the 15th century the general condition of the house had become desperate. There were frequent disputes over the priorship, revenues were failing, and contact with France had become difficult because of the Hundred Years War (1337–1453). An undated statute had exempted the Scottish houses from attending the annual General Chapter at Val des Choux (Birch 1900, 119), but we do not know what degree of contact the priory managed to maintain with its mother-house. A letter, dated 18 December 1506, from Prior-General James Courtois to the Prior of Beaulieu, notes that on account of the distance (1300 km – this letter took 40 days to reach Scotland) his predecessors had extended the intervals between the Prior's visits to Val des Choux from four to six years, but even this had not been observed. Courtois goes on to lament that the promised consignment of Scots salmon, which should have been sent to his agent in Bruges for transmission to Dijon, had also failed to appear (Batten 1877, 157).

On 12 March 1453/4 Pope Nicholas V issued a Bull uniting the priories of Urquhart and Pluscarden, and, from this date until the Reformation, Pluscarden was a dependent house of the Benedictine abbey at Dunfermline, having severed its links with Val des Choux. This move had been initiated by John Benale, Prior of Urquhart, who petitioned the Pope that as both houses had suffered material and spiritual reduction (Urquhart had two monks, Pluscarden six) and as Val des Choux was too remote to offer adequate help and guidance, the two houses should be united (Macphail 1881, 223). The joint community was to be at Pluscarden as the buildings there were considered to be finer and more extensive, as well as easier to bring into repair. The Valliscaulians were required to make fresh profession as Benedictines.

This union marked an improvement in the priory's fortunes, and Pluscarden probably benefited materially and spiritually from being placed under the jurisdiction of Abbot Richard de Bothwell (1445–70) at a time when Dunfermline was flourishing as a centre of learning and the arts. The second Benedictine Prior of Pluscarden, William de Boyis, had charge of the church fabric at Dunfermline throughout the time of Abbot de Bothwell's restoration and building work at the west end of the abbey nave c 1450 (Webster 1948, 231) and it is tempting to assign the re-ordering of the Pluscarden priory church to within the period of his priorate (Hannah 1936, 190–1).

PLUSCARDEN PRIORY  
MORAY  
GRAMPIAN



ILLUS 1 Location maps. Based upon the Ordnance Survey map © Crown copyright

Signatures on the charters show that the community numbered four in 1345; at least seven in 1500; nine in 1508; 13 in 1524 and 1548; and 11 in 1558. To this figure we must add an unknown number of resident servants. At the time of the Reformation, the Rental of 1561 (Macphail 1881, 254f) takes account of five monks; a chamberlain with two servants; a master-cook; porter; master-baker and gardener. Earlier figures were probably higher rather than lower, as in black-monk houses the servants had always taken the place of lay brothers. A ratio of one layman to one monk was not uncommon even in the 11th century, but by the 16th century the proportion of employed servants had risen dramatically (cf Knowles 1971, 260). Certainly the Prior of Pluscarden was in a position to give hospitality to King James IV and his retinue in September 1506 and it is interesting to note that the king's expense sheet on that occasion included 'drink silver to masons working on the priory, 15 shillings' (Anson 1959, 101).

The last two priors of Pluscarden, George Learmonth (1509–29) and Alexander Dunbar (1529–60), both owed their position to the patronage of the king. George Learmonth was a cleric of the diocese of St Andrews (*Cal Papal Letters*, XVIII, no 51), and was later (1529) nominated coadjutor to Bishop Gavin Dunbar of Aberdeen, with right of succession (*Reg Episc Aberdon*, I, 394) but may have died before his consecration. About this time, certainly by 1535, Pluscarden was erected into a regality.

Learmonth's successor, Prior Alexander Dunbar, died in the year of the Reformation. His long priorate is commemorated by the building of the Dunbar Vestry, and by the extensive alienation of monastic property to members of his own family. To what extent this was a response to the crippling taxation of the Church under James V, and to what extent vested self-interest, is not yet apparent. He was actively involved in affairs of Church and State, attending at least five parliaments between 1540 and 1558, and had been summoned to a Privy Council in St Andrews in 1546. He probably attended three provincial chapters called between 1549 and 1559 which were part of John Hamilton's efforts to reform the Church. Although secular clerics, both these priors took the Benedictine habit on appointment and served as regular superiors (Dilworth 1986, 63).

After Dunbar's death in 1560 there followed a series of Commendatory priors who drew the monastic revenues and pensioned the remaining monks. The last definite reference to a monk of the community dates from 1587, the year the Pluscarden estates were secularized and erected into a free barony by Act of Parliament. It is a grant of fishings on the Spey made to James Dunbar of Cumnock in March 1586/7 endorsed with the approval and consent of Thomas Ross, the sole remaining member of the community, and bearing the monk's signature beneath that of the commendatory prior, Alexander Seton (Macphail 1881, 245).

The priory fell into ruins some time in the 17th century and in 1682 was used as a stone-quarry to provide materials for the reconstruction of St Giles Church, Elgin. Payments to the hauliers suggest that demolition of the monastic buildings must have been extensive (*Fasti Ecclesiae Scoticanæ*, II, 286 (Scott 1915–28); Anson 1959, 158). Further decay was arrested by the 4th Earl of Fife who, in 1821, converted the east range into a shooting lodge. John Patrick, 3rd Marquess of Bute, bought the property in 1897 and began complete restoration of the church but work was halted on his death, and resumed only when Benedictine monks returned to Pluscarden in 1948.

There are several accounts of visits to the priory ruins in the 18th and 19th centuries. One of these, written by a Catholic priest in 1761, is particularly valuable as it gives the earliest known version of the tradition that the nave was not completed. It reads: '... I am in some Doubt whether or not the Western Part [of the church] has ever been finished, the Ruines of it being now only

three or four feet high whereas the Walls of the other Parts are almost entire and the Inhabitants there have a vulgar tradition that when the Church was all finished excepting that Western Part the Builders should have heard a Voice saying

The Monastery of Pluscartie  
Begun; but ne'er shall ended be

and upon this they should have desisted' (Humphries 1952, 108).

## THE PRIORY CHURCH

Richard Fawcett

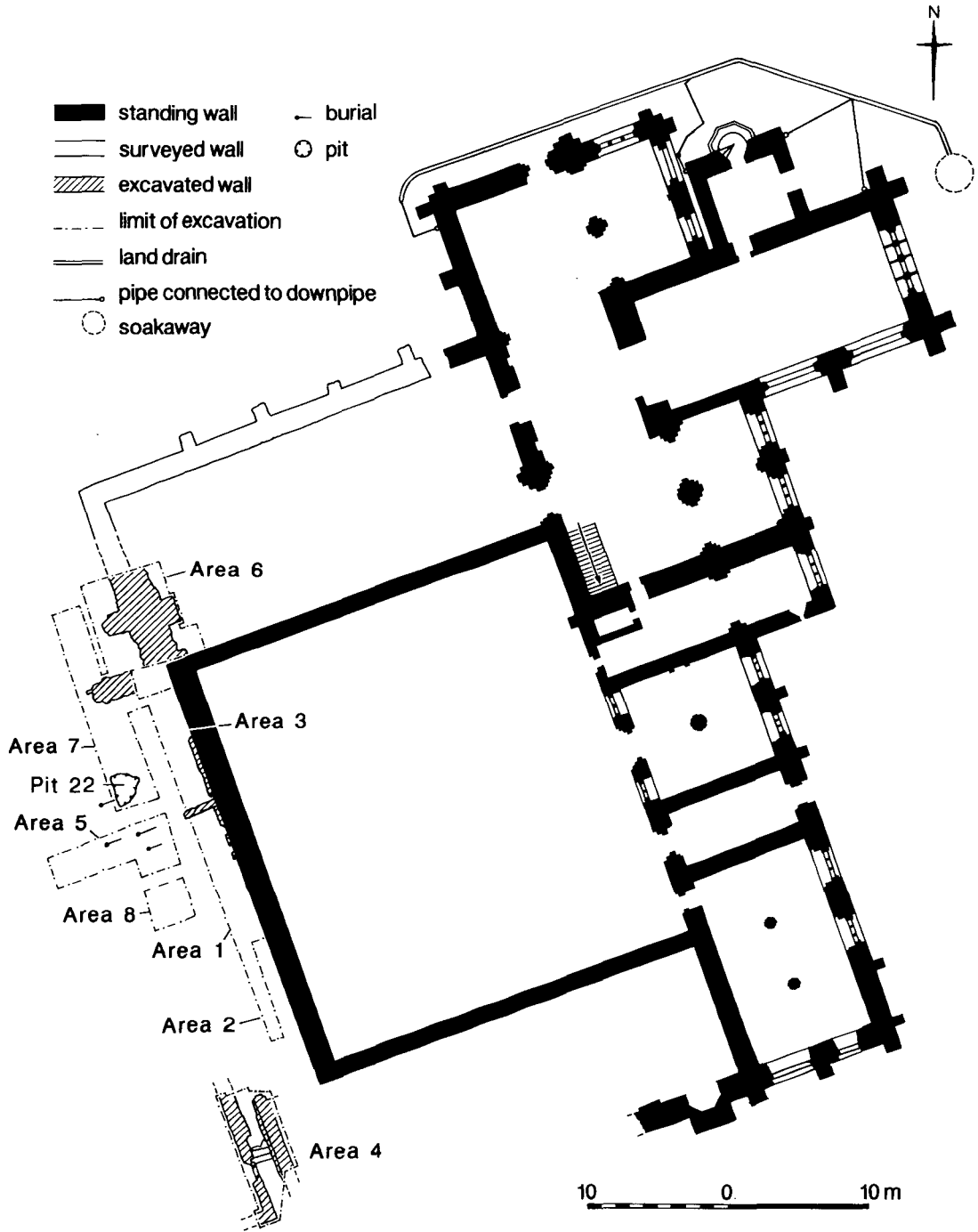
There is virtually no documentation by which the construction of the church of Pluscarden can be dated and reliance, therefore, must be placed almost entirely on the evidence of the architecture. This evidence indicates that, although building was not an unduly protracted operation, it was a *complex process involving several stages, with subsequent damage and rebuilding adding to the difficulties of understanding the precise sequence.* The following paragraphs can therefore be offered as no more than a very provisional interpretation.

Presumably the plan was determined, and the footings and base course laid out, not long after the foundation of the priory in about 1230 (Cowan & Easson 1976, 84–5), although it may be assumed that a temporary oratory would be provided for worship pending the completion of the church. The plan chosen, with an aisle-less rectangular presbytery, and a two-bay chapel aisle on the east side of each transept, is of a type most commonly associated with the Cistercians (*illus 2*). In Scotland, however, this plan type was also adopted by several other Orders, presumably because it represented a relatively economical arrangement, and variants of it were used for Valliscaulian Ardchattan, Augustinian Cambuskenneth and the Tironensian houses of Kilwinning and Lindores. The nave was set out with a single aisle on the side towards the cloister, although it was more common for single aisles to be on the side away from the cloister, in which position they often represent later augmentation.

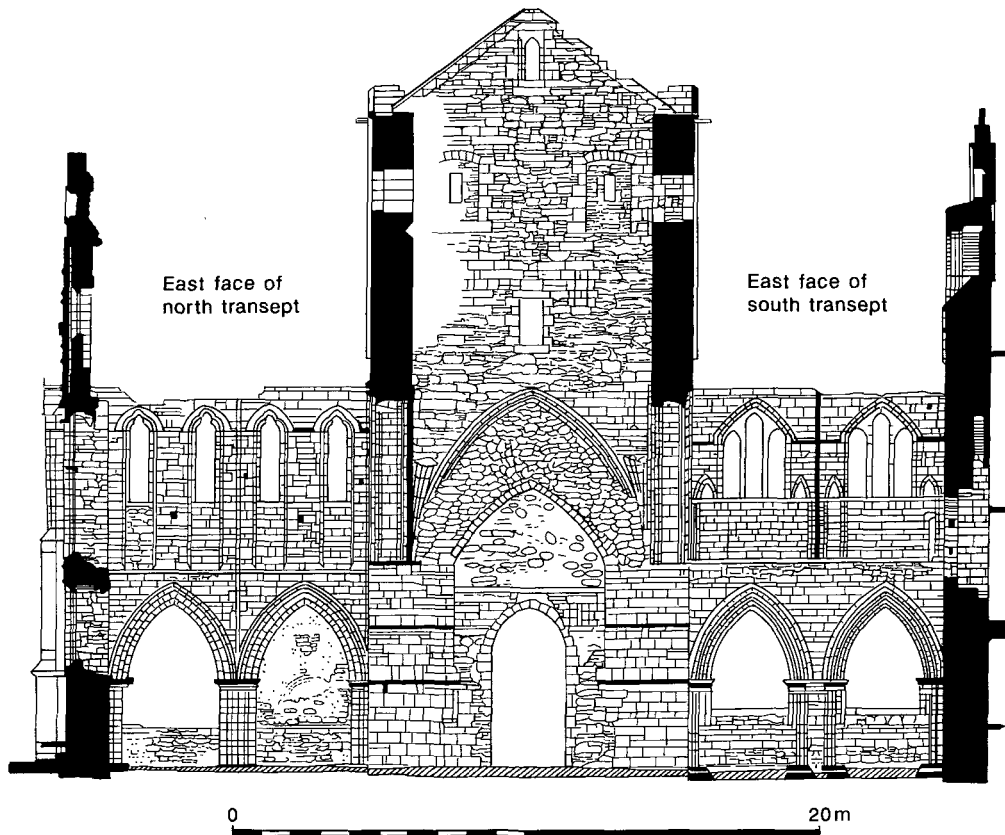
The architectural evidence points to the transepts having been completed in advance of the presbytery, presumably to allow the gathering of adequate funds for an eastern limb of greater pretensions than was at first possible. The internal eastern elevations of the two transepts present differing solutions to the problem of devising two-storeyed designs which could accommodate vaulted aisles together with a mural passage at clearstorey level. What is seen in the two transepts was clearly the result of several campaigns (*illus 3*).

The pier and responds of the south transept arcade are of stepped-and-shafted profile, as is also the tower pier at the south-west corner of the crossing. The northern respond of the north transept arcade, which is coursed in with the outer wall, is of a related type. All this suggests that the south transept arcade was built along with the outer walls of the transept. By contrast, since the pier and southern respond of the northern transept arcade, together with the pier at the north-east corner of the crossing, are of clustered shaft type (a type also used for the pier at the south-west corner of the crossing), work on the main body of the north transept seems likely to have been carried out later than on its southern counterpart.

In the south transept, the chapels and the eastern clearstorey each have windows in the form of a triad of lancets embraced by a single hood moulding in each bay, and the two storeys of that transept thus seem unlikely to be far apart in date. Internally, the clearstorey windows are



ILLUS 2 Site plan before restoration (after Mackintosh 1893)



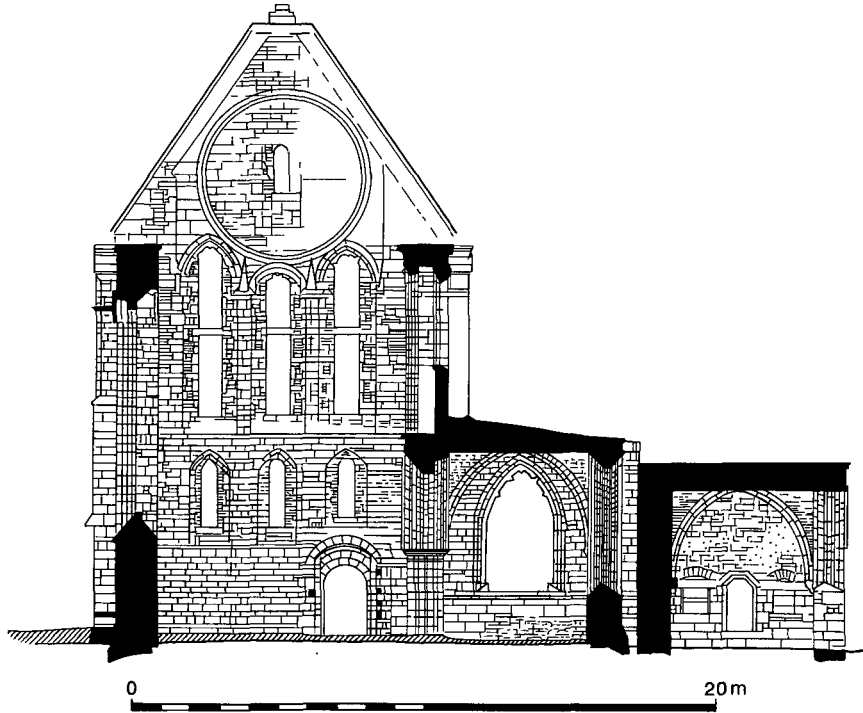
ILLUS 3 North/south section through transepts, showing east elevation before restoration (after Mackintosh 1893)

contained within an arch of similar two-centred segmental form as the external hood mould, with flanking arches opening onto the clearstorey passage. The floor of this passage, of course, runs at a lower level than the window sills, which had to be set above the pitched roof over the aisle vaults, and the flanking arches consequently are much lower than the central arch.

Although the east conventual range, which adjoins and extends southwards from the south transept, falls outside the remit of this paper, it is perhaps worth mentioning that the original sacristy, immediately to the south of the south transept, has detailing very like that in the transept, and was evidently built as part of the same campaign. It could be that the need to provide the all-important accommodation in the east range at an early stage of the operations was a factor in encouraging the completion of the adjoining south transept before that of the north. Internally, a fine feature of the south transept is the night stair to the first-floor dormitory in the east range; the vaulting which carries the upper part of this stair across the sacristy appears to be a later intrusion in its present form.

The north transept clearstorey, which was probably one of the last parts of the transepts to be completed, has a simpler design than that on the south, with two cusped lancet windows to each bay, framed by single arches on the inner side of the clearstorey passage. Unfortunately, the



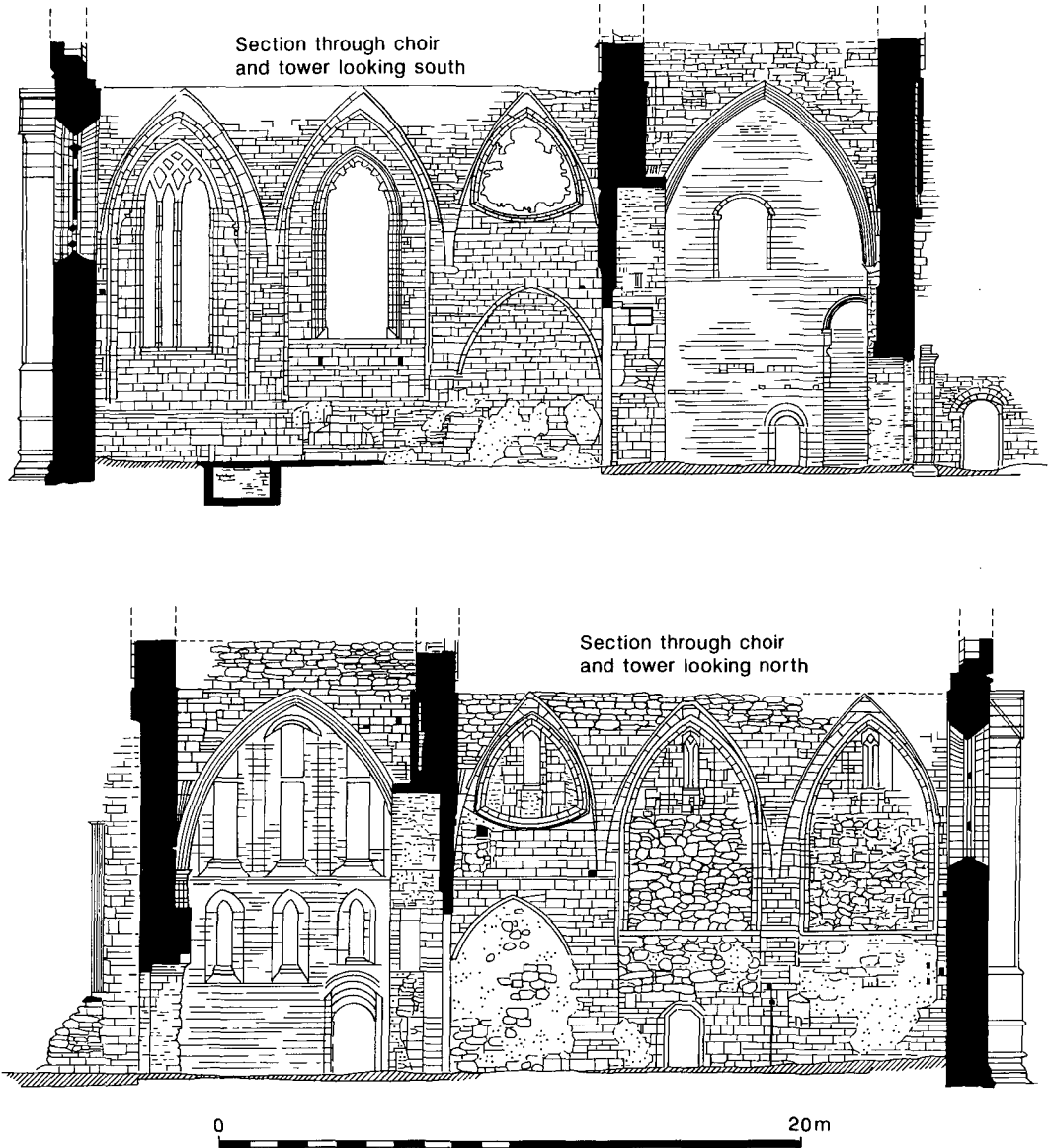


ILLUS 4 East/west section through transept, showing north gable before restoration (after Mackintosh 1893)

relationship between the two levels of the north transept has become less clear as a result of the later modification of the eastern windows of the chapel aisle. The chapel window reveals themselves appear to be original, however, and the wide arches could have been designed for tracery from the start.

Externally the most striking feature of the cross arm is the gable elevation of the north transept (illus 4). Its superimposed ranks of lancets could indicate some debts to the transept gables designed for Elgin Cathedral, c 1220s, as part of the most prestigious campaign underway in the north-east in that period. Such an approach to the design of terminal walls had a long history, however, and Pluscarden shows its independence of Elgin in many respects. The north doorway may be noted as a particularly refined example of an opening with carefully detailed arch mouldings emerging directly from broadly chamfered jambs. A related doorway was provided as the entrance of the warming house in the east range (now used as the refectory).

The place of the nave in this complex chronological sequence is now difficult to determine, since so little of it remains, but, as with the transepts, its surviving details suggest it was completed before the presbytery. It has already been said that the clustered-shaft south-west crossing pier belongs to the same intermediate phase of works as the north transept arcade, and this pier also incorporated – and thus dictated the form of – the eastern respond of the south nave arcade. Perhaps the most interesting aspect of this respond is that it apparently rested on a solid screen wall intended to run down at least part of the nave arcade. This suggests that the monastic choir



ILLUS 5 East/west sections through presbytery/choir and crossing before restoration, showing (above) south wall, (below) north wall (after Mackintosh 1893)

originally extended down into the nave, with this wall being provided as a backing to the stalls. Such an arrangement, which continued to be particularly common in Cistercian churches, in which the western arm was divided between the choirs of the monks and lay brethren, can still be seen in the late medieval rebuilding at Melrose.

Supporting evidence for an earlier date for the nave than the presbytery is provided by the design of the handsome round-arched processional doorway, which opened from the east bay of the south aisle into the cloister (illus 5). This entrance had five alternately projecting and recessed free-standing shafts to the jambs. The great west doorway of the nave must have been even more imposing on the fragmentary evidence of its surviving bases, which indicate jambs with at least four orders, each apparently composed of a triplet of shafts separated by individual shafts.

When the presbytery was eventually started, it would seem to have had nothing of that tentative quality which resulted from the various changes of design in the transepts; it was, indeed, a structure of the highest calibre. Its completion is unlikely to have been before the 1260s or 1270s, since its side windows – originally of great scale – have stumps of bar tracery related to that first used at Glasgow Cathedral and Elgin Cathedral and at Sweetheart Abbey, in those decades (Fawcett 1984, 152, 162–4). Along the flanks the surviving springings of the tracery show that the windows were of four lights grouped in two pairs, with circlets within and between the sub-arches; that is, essentially the same form as the west window of Glasgow Cathedral before modern restoration. The design of the original east window is unknown, but the high quality of the detailing of the tracery in the presbytery as a whole may still be appreciated from the delightful ‘spherical triangles’ above the aisle roofs, which contain triplets of foiled circlets.

Although the aisles of the transepts and nave were stone vaulted, as was common in the greater Scottish churches of the period, with the exception of the crossing area, the higher main vessels of those parts were not. By contrast, the presbytery was given particular prominence by being vaulted – a distinction shared with few other Scottish buildings under construction in the 13th century. (One is tempted to suspect that this may have been a result of rivalry with Elgin Cathedral, where at first not even the aisles were vaulted.) The roof space above the vault was lit by a large vesica and a trifoliated triangle, which pierced the east gable one above the other (illus 6).

Barely rising above the crossing of the four arms of the church was a squat tower, each face of which was decorated by bifurcated-cusped trefoils in the triangles to each side of the four roofs. In a church which owes something to Cistercian ideas it may be that the tower was never intended to rise more than minimally above the roofs. In its final form, the tower was capped by a characteristically Scottish Late Gothic saddle-back roof, although a low spire possibly was intended originally.

At an uncertain stage in its history, the church had to be extensively remodelled. Most of this reconstruction could post-date the change of allegiance of the house, from the Valliscaulian to the Benedictine Order, in 1454 (Cowan & Easson 1976, 61, 85). Certainly, in 1457, the buildings were said to be in a bad state (*Cal. Papal Letters*, XI, 330), and it was particularly stated that at that time the vaults of the choir and crossing were under threat of collapse. However, although there is no definite record that Pluscarden was affected by the depredations of the Wolf of Badenoch in 1390, it is believed traditionally that he ravaged Pluscarden as well as Elgin. This theory would possibly accord better with the evidence. In support of this the resignation of Prior Thomas, and the election in his stead of Brother Alexander in 1398, seems to have been on the basis that a firm hand was needed to bring the buildings back into repair (Macphail 1881, 83–4). It is additionally significant that it was specifically stated in the 1450s that it was nearly 60 years of inaction which led to the then existing state of pending collapse.



ILLUS 6 East gable of presbytery (*Photographs by Father Giles, Pluscarden Abbey*)

What is certain is that at some stage the high vault of the presbytery was removed, and the windows were greatly reduced in size in order to strengthen the damaged walls. Single lancets, Y-tracery or intersecting tracery rather dispiritingly replaced what must have been one of the finest ensembles of first-generation bar tracery in Scotland. Only the new three-light upper east window was of more than the most minimal pretensions, with daggers or trefoils within the intersecting matrix (illus 6). It may be noted, incidentally, that the way in which the eastern windows fit within the earlier window arch is not dissimilar from the manner that windows were inserted into the west window arch at Sweetheart Abbey, presumably after the fire there of 1397.

Possibly as part of the same operation of stabilization and repair, the monastic choir must have been moved eastwards so that it was fully contained within the eastern limb, since the eastern arch of the tower was partly blocked by an inserted wall. This wall also served as a pulpitum, pierced only by a relatively small central doorway, and flanked by a stair leading up to a loft. Since the western tower arch was also built up it is likely that these measures were an attempt to increase the stability of the tower.

The implications of these operations for the nave are difficult to assess, again because of the paucity of the remains. However, the mouldings of the single window reveal at the eastern end of the nave north wall suggest this window was a rebuilding of the 14th or 15th centuries, indicating that significant structural works also had to be carried out here in the later Middle Ages. Nevertheless, there must be at least a suspicion that the nave was never fully rebuilt.

The last significant identifiable addition to the church was the sacristy and treasury block, on the north side of the presbytery, which took over the functions of the earlier sacristy adjacent to the south transept. This square structure, with a polygonal stair turret on its north face, is datable to between 1533 and 1560 on the basis of arms on its vault which are assumed to refer to Prior Alexander Dunbar. The tracery of its east window, of uncusped loop form, is characteristic of the first half of the 16th century (Fawcett 1984, 182). One other late medieval insertion was the sacrament house in the north wall of the presbytery, although the suggestion has been made – perhaps a little over-ingeniously – that this is a composite piece which could owe its present appearance to post-Reformation reconstruction (McRoberts 1965, 52–3).

## THE EXCAVATION

Finbar McCormick

### NAVE (AREA 6, ILLUS 2)

Prior to the return of the Benedictine community to Pluscarden in 1948, nothing of the nave was visible except for small segments of walls protruding from the crossing. This led to speculation that the nave had never been built, a not uncommon feature of Scottish medieval churches, at St Monans in Fife and Seton in East Lothian for instance. However, the clearance of the area, undertaken by the current resident Benedictines, uncovered the first course of dressed stone of the nave and the buttresses along its northern wall, as well as the loose base stones of the western doorway (referred to in R Fawcett, above). It was therefore clear that the building of the nave had at least been started, although the possibility that the walls had not extended higher than their basal course could not be discarded.

Excavation was limited to the south-west corner of the nave, and nothing of this survived above the level of the foundations. The excavations revealed the foundations of about half of the nave's west wall, a short segment of the foundations of the southern aisle, and the foundations of

two buttresses. The northern, and smaller, of these two buttresses presumably flanked the southern end of the west doorway, while the foundations of a larger buttress were present at the south-western corner of the church. The foundations were 0.5–0.6 m deep. They were made by digging a pit with rounded edges into which concrete was poured. This concrete consisted of a mixture of mortar and small- to medium-size stones.

The upper surface of the foundations was sometimes faced with flat stones and these generally were shattered acutely, indicating that the foundations originally supported a great weight. This further implies that high walls had formerly existed on the foundations and, on balance, that the nave of the church had been completed.

#### SITE OF WEST RANGE (AREAS 1, 2 & 3; ILLUS 2 & 7)

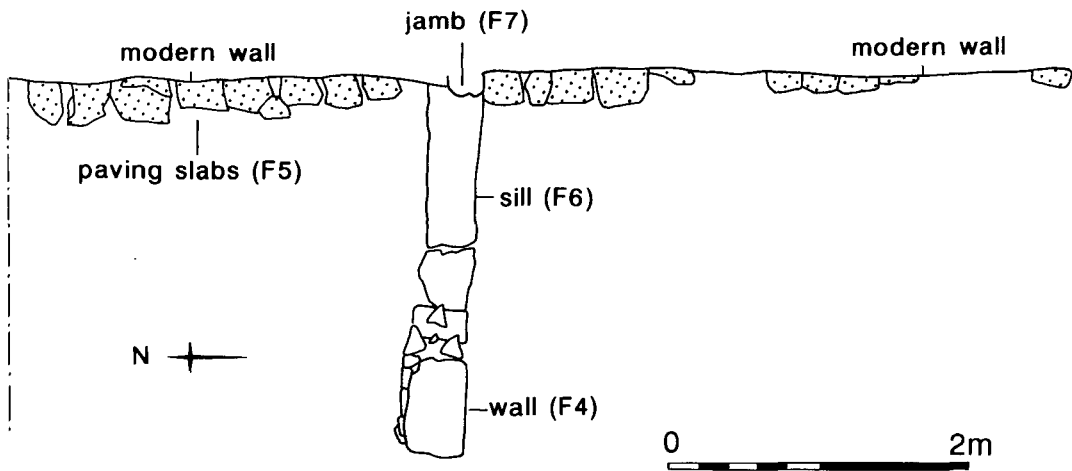
The wall bordering the west range (illus 2) is of unknown date and forms the western wall of a modern dormitory built since the return of the Benedictines in 1948. The wall clearly pre-dates this, and is present on plans of the Abbey made in the 19th century. There is no evidence, however, to indicate that it is of medieval date or formed part of the original monastic west range.

The area immediately to the west of this wall contained no standing walls and had been a pathway until converted into a garden in the recent past. To the west of the garden was a rockery that abutted a field, the surface of which was 1–1.3 m higher than that of the garden. The subsoil was a glacial gravel terrace. The south of the garden coincided with the end of the terrace which fell away steeply to a level river plain. A small area of the latter was excavated and produced the foundations of a medieval building (see below). The domestic range on the southern side of the cloister, and the south-east part of the eastern range, both extended beyond the edge of the terrace on to the river plain, and this difference in height allowed these buildings to have a basement.

The glacial till was found to lie about 0.2 m below most of the garden area and, despite extensive trenching, no evidence was found for any substantial buildings in the areas excavated to the west of the cloister. One trench (Area 5) was extended westward into the adjoining field to explore the ground that would have contained the outer wall of a west range, if this had been of similar width to the eastern and southern ranges. No evidence for any buildings was found. It can therefore be assumed that no western range, contemporary with and on the same scale as the southern and eastern ranges, existed on the site.

The foundations of an insubstantial wall (F4 on illus 2) were present, however, and extended westwards for a short distance. The wall, which is about 0.3 m wide, has a maximum height of about 0.2 m. It contains some re-used dressed stone and the eastern part consists of a single sill stone (F6), about 1 m long, which is bound at its eastern end by a thin quarried angle roll jamb stone (F7; illus 7), a type which Richard Fawcett (pers comm) states was most common during the 16th century. This jamb clearly pre-dates the wall of unknown date that extends north/south, defining the west side of the present west range. This wall also seals, and in doing so preserves, a line of small flat paving slabs (F5), 0.2–0.3 m square, which extend to the north and south of wall F4 (illus 7). It is likely that these slabs are the remnants of two paved areas partitioned by the wall (F4), with access between the two areas being provided by the door represented by the sill and jamb.

This wall, the door and the paving probably represent the remains of some late medieval building erected against a north/south wall, now superseded, that originally demarcated the western side of the domestic range. In a monastic house of this kind, the west range, when present, was usually the latest part of the domestic range to be built, and was not constructed until pressure created by the presence of large numbers of monks and laymen made it necessary. As the Valliscaulians did not generally have lay brethren (Flavell, above), this may have meant that a west



ILLUS 7 Area 3 plan

range was not needed during the primary period of occupation at Pluscarden. A west range is similarly absent from Dryburgh Abbey. There the surviving remains are more extensive than those at Pluscarden, and the cloister is bounded on the west by a featureless wall distinguished only by a lavatory and small door at its south-western end (Richardson & Tabraham 1983, 4). Some small buildings were erected against the western face of the Dryburgh Abbey wall in late medieval times, and these provide a good parallel to the structures noted at Pluscarden.

#### AREA 4 (ILLUS 2, 8 & 9)

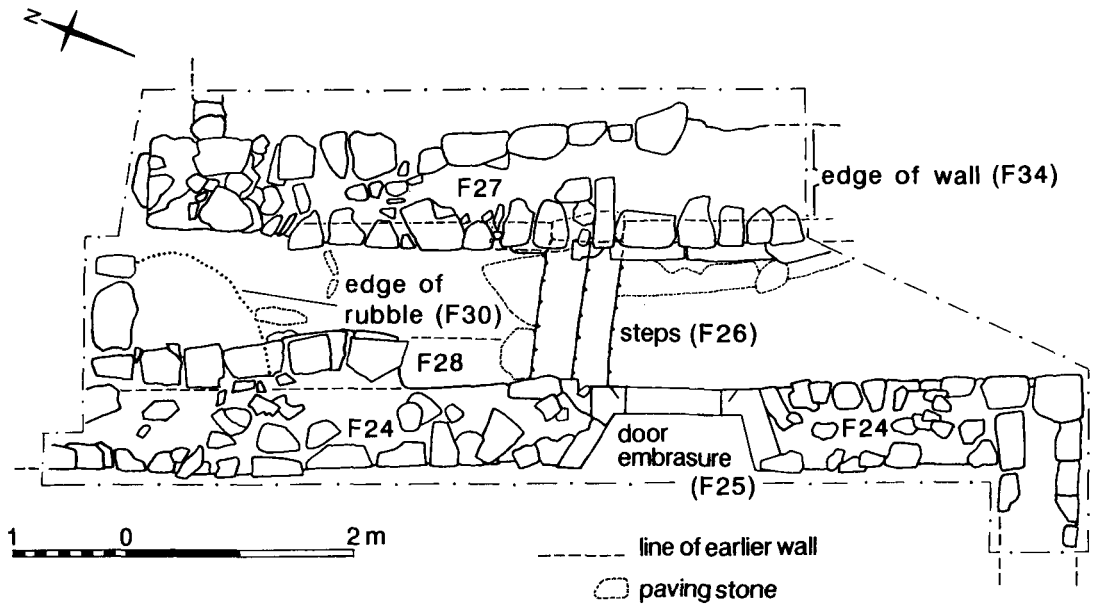
The southern part of the monastic complex was built on the river plain, at a lower level than the remainder of the buildings. As stated above, this included the fragmentary southern domestic range, as well as the southern end of the eastern claustral range. Extending eastwards from the latter are a series of ruinous, stone-vaulted buildings which were not included in the incomplete, and slightly inaccurate, 19th-century plan on which illus 2 is based. Prior to excavation, part of the foundations of a building orientated east/west could be seen to the south-west of the claustral range. Excavation of the eastern end of this building uncovered a series of walls and steps.

Two periods of construction were represented and can be summarized as follows:

*Phase 1:* This consisted of the building of wall F24 with a door sill (F25) and a flight of steps (F26) outside the door. The eastern edge of the steps was flanked by wall F34 which was of similar width to wall F24.

*Phase 2:* Wall F24 was widened by the addition of a course of stones F28. Wall F34 was demolished to the level of the tops of the steps and replaced by the wider wall F27, which covered part of the eastern edge of the steps.

The broad chamfered sill (illus 9) can be dated, on stylistic grounds, to the 13th or early 14th century, but in the context of Pluscarden, a middle to late 13th-century date is more likely



ILLUS 8 Area 4 plan

(R Fawcett, pers comm). It displays practically no wear which suggests that either the building was never finished, or that it fell into disuse in a very short period of time. The steps begin immediately outside the door and lead to a level area. It seems likely, however, that a second flight led from this level area up onto the gravel terrace. This hypothesis is supported by the fact that the last 1.5 m of F24 has a rough outer face that originally would have been masked by a second series of steps. A pile of rubble (F30) also lay against this part of the wall (and underneath the wall thickening F28) and probably represents the foundations of such a flight of steps. The only artefacts from the rubble were several sherds from the same pot (Find 19), which Murray (below) suggests is of 13th/14th-century date. The pieces were found together and survived as large fragments compared with other pottery from the excavation. This implies that the pottery was not redeposited, and is probably contemporary with the Phase 1 part of the building.

The base of the wall F27 sealed a group of animal bones that lay on the top of the steps. These consist of several bones each of cattle, sheep/goat and pig, along with three oyster shells (see fiche report for complete list). Within the fabric of wall F27 was found a fragment of glazed strap handle (Pottery Cat. No 2) which Murray (*infra*) states is probably of a 14th/15th-century date.

The reason for the necessity of widening the two walls, with the accompanying partial destruction of earlier features, is unknown. It is possible that the east/west building was never completed, a hypothesis supported by the absence of wear on the sill.

#### THE BURIALS (AREA 5; ILLUS 10)

A group of three extended inhumations was found, close together, south-west of the western end of the nave. Further excavation to the south, north, east and west of the inhumations failed to produce



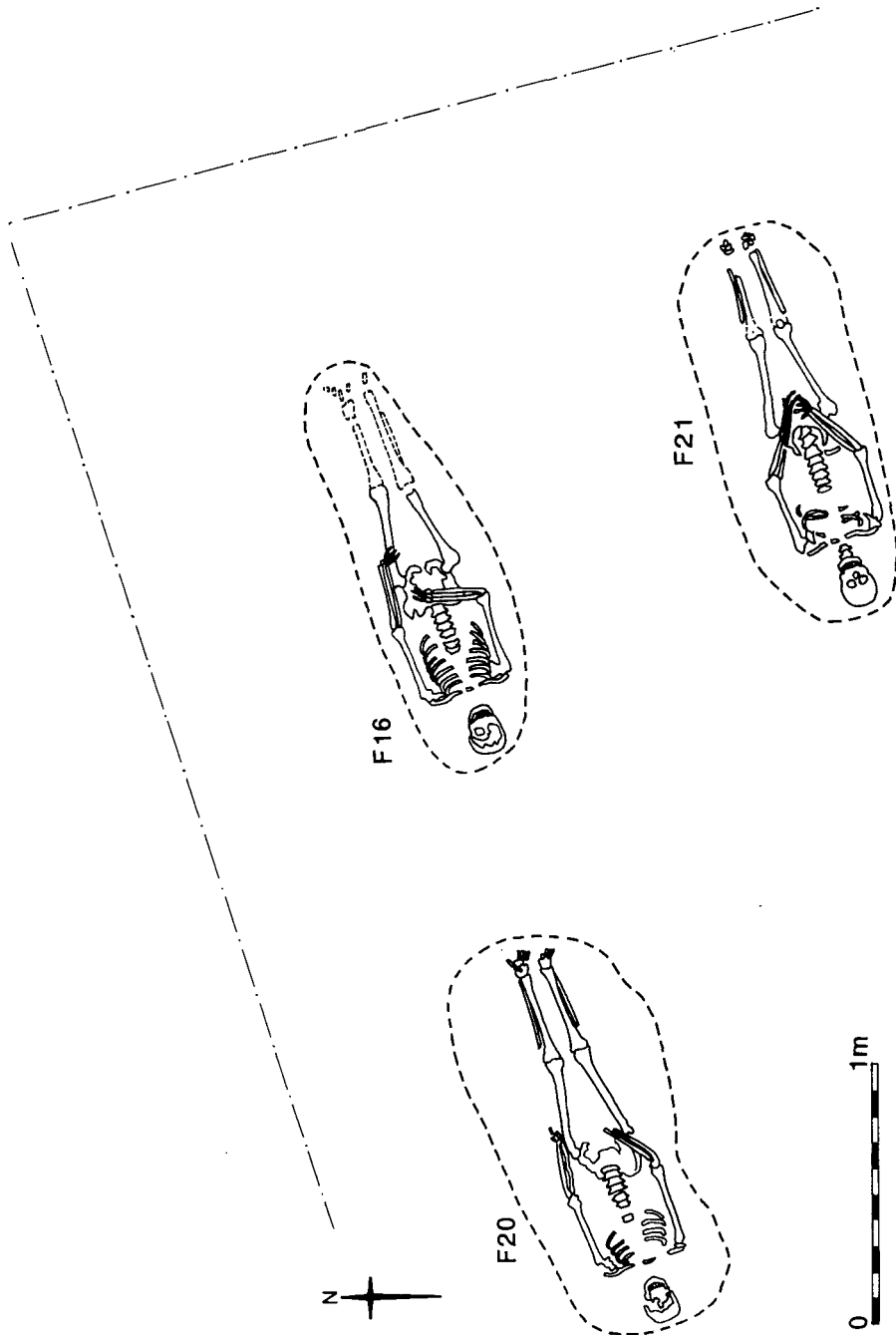


ILLUS 9 Area 4 from south after F28 had been removed

any more burials, but a burial was found extending into the baulk immediately north-west of the group, this burial having been truncated by the stone-lined pit F22.

The burials were in very shallow graves immediately under the garden soil, with grave fills of very similar soil type. The graves were all aligned NE/SW with their heads at the latter end. This orientation is similar to the abbey church (illus 2). A sample of bone from burial F21 was submitted for radiocarbon dating. This provided a date of  $490 \pm 50$  bp (GU-2983) which calibrates to a 68.9% probability range of AD 1405–1460 or a 95.9% probability range of AD 1300–1475 (Pearson *et al* 1986).

The burials are an isolated group, and do not constitute a cemetery. They are of identical orientation and do not cut each other. In addition, there was no indication of any surface markers on the site (although consequent disturbance could have removed these). It seems likely, therefore,



ILLUS 10 Plan of burials

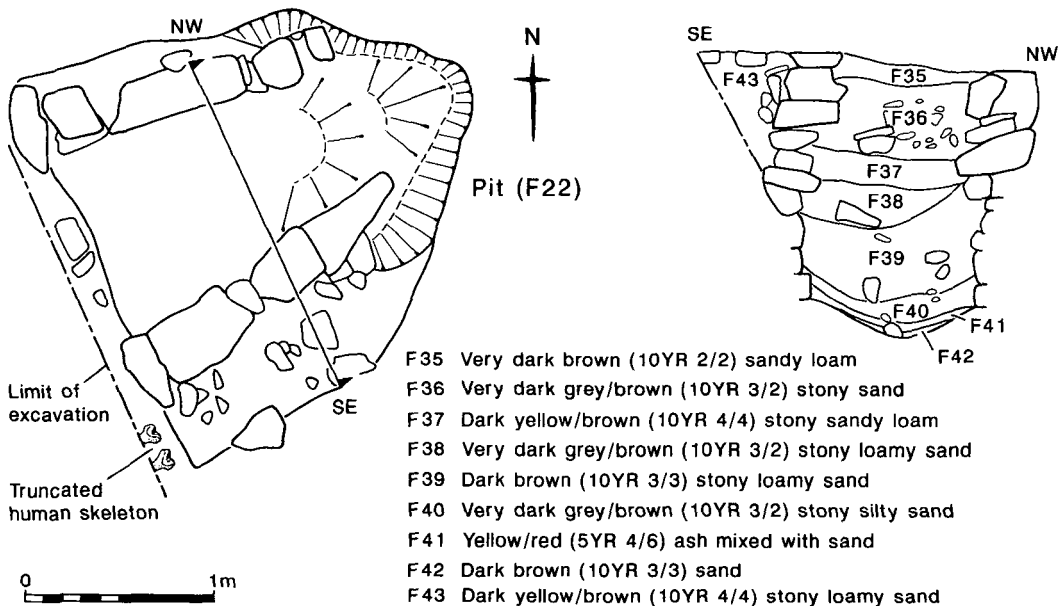
that the skeletons represent the use of this area as a burial ground for a limited period. Indeed, it is tempting to suggest that the burials occurred at the same time. Possible support for this is provided in that two pieces of pottery – one found amongst the bones in Skeleton F16 and one among the bones in Skeleton F21 – were adjoining sherds of 13th or 14th-century date (Pottery Cat. Nos 5 & 6). The implication is that the shallow graves were dug at the same time, and that the spoil from the graves contained some earlier pottery, which was then broken and backfilled into two different graves. The radiocarbon date indicates that the burials are almost certainly of pre-Reformation date and probably date to the earlier part of the 15th century.

The skeletons were reinterred in the modern graveyard at Pluscarden on 3 August 1991.

#### THE STONE-LINED PIT (F22) (AREA 7; ILLUS 11)

Lying immediately to the north of the burials was a partially stone-lined pit. It post-dated the burials as it cut an unexcavated skeleton at the junction of the femur and tibia. The pit survived to a maximum depth of about 1.45 m, and was roughly 2 m long with a maximum width of 1 m. The northern and southern sides of the pit were lined with stone walls to their base. The western edge was unlined and consisted of a straight and vertical face, cut through concreted glacial gravels. The eastern pit edge, again unlined, was rounded and was probably the original entrance to the pit (see below).

Most of the layers in the pit were sterile but layer F39 was a striking exception. It contained animal bones, glass and, most unusually for free-draining soils, a small sample of organic matter (F23). The upper levels of the layer contained the articulated partial skeleton of a dog. The middle part contained a fist-sized deposit of organic material, comprised mostly of wool, which did not



ILLUS 11 Plan and section of Pit F22

extend either to the sides of the pit or the drawn section. The organic material also contained pollen, parasite ova, beetle and fly remains and fragments of feathers. Within the organic context, and in the surrounding sterile soil, were fragments of window glass. About 50 mm below the organic deposit was a partly articulated cat skeleton. Other mammal, fish and bird bones were also present in the layer. The artefactual and environmental finds from this layer (F39) are discussed below. Dog bones from this layer produced an uncalibrated radiocarbon date of  $425 \pm 45$  BP (AA-8792) which calibrates to a 68.9% probability range to AD 1430–69 or a 95.9% probability range to AD 1410–1614 (Pearson *et al* 1986).

Most of layer F39, however, was sterile with all the finds being in the immediate vicinity of the rounded eastern end of the pit. This suggests that the pit was probably roofed at the time that this material was deposited, and that the rounded end was the entrance and only means of access to the pit, thus accounting for the very localized distribution of the finds.

#### SERVICE TRENCH OUTSIDE NORTH TRANSEPT

##### Dom Ambrose Flavell OSB

In December 1987 a 0.5 m wide service trench to carry a new rainwater drain, was dug from a point just west of the north-west corner of the north transept to a previously constructed soak-away, 6 m east of the north-east corner of the choir (illus 2). It ran parallel to the north transept wall at a distance of 0.5 m from the outer face of the buttresses, turning south-east when directly opposite the north-east corner of the Dunbar Vestry. The depth of the trench, which took advantage of the downward gradient of the ground surface, was a fairly constant 0.6–0.8 m.

Of the three buttresses along the north wall of the transept, only the one in line with the transept aisle arcade projected into the trench. This was a solid construction of large unworked stone blocks and rubble set in mortar. It rested on the natural orange-brown sandy-clay subsoil, about 1 m below present ground level. The subsoil shelves more steeply than the ground surface, increasing from a depth of 0.25 m at the western end of the trench to 0.6 m opposite the Dunbar Vestry.

The stratigraphy outside the north door of the transept was as follows: 0.1–0.15 m of topsoil overlying loose angular stone rubble in a dark brown soil matrix which included modern bottle glass. At a depth of 0.2–0.25 m below the surface was what appeared to be a sealed layer, 20–100 mm thick, made up of very compact crushed sandstone chips mixed with earth. Within this layer, on line with the middle lancet of the north transept window, were found window glass and leading, two sherds of green-glazed pottery, fragments of moulded stone and flecks of charcoal. This layer was almost immediately above the natural subsoil.

Shallower trenches were dug to connect the gutter downpipes to the main drain. One of these revealed that the west wall of the Dunbar Vestry is resting directly on the foundations of an earlier, and larger, building.

No other structural remains or graves were uncovered.

#### WATCHING BRIEF REPORT OF WORK UNDERTAKEN IN THE SOUTH-EAST VAULTS

##### Dom Ambrose Flavell OSB

The priory was built on the edge of an old river terrace and consequently the south range and its extension running eastward had to be built on a series of vaults to bring the floor to the level of the cloister. The four collapsed vaults are all that survive of the range jutting out from the south-east

corner of the east range. The second-westernmost of these has been given a temporary roof, and is used as a potato store by the present community.

A new floor was laid in 1989 which required the vault to be dug out. The deposit in the northern half of the vault was evidently modern (ash, coal and coal briquettes), and rested directly on the natural subsoil. There were no indications of pits, post-holes or similar features. Archaeological layers survive in the southern half of the vault and were not removed.

A strip 1.5 m wide, 4 m from the north wall and parallel to it, was cleaned down to natural. A flat stone slab, c 0.5 m × 0.4 m was found, set in an area of burnt daub (possibly the base of an open fire) about 20 mm thick. Around the stone slab, above this surface, was a brown silty clay with some animal bones and iron fragments, also some white-glazed pottery.

This vault is directly opposite the Prior's Lodging, which remained in occupation until the 18th century (Macphail 1881, 177).

## SPECIALIST AND ARTEFACT REPORTS

### HUMAN BONES

(A full report is in microfiche)

#### Daphne Home Lorimer

The three burials all appear to be females, aged about 17–18 years (F21), 25–35 (F16) years, and 35–45 years (F20) at time of death. It was not possible to calculate the stature of F21, but F20 and F16 were both about 1.62 m (5ft 4in.) in height. The ageing and sexing of the skeletons was based on the work of Bass (1987); Gray (1977) was used for general anatomical reference.

The bones were very fragmented and abraded. Few non-metrical variations could be recorded in the skull (see fiche), and almost none in the post-cranial skeleton. All three skeletons, however, exhibited platymeria or antero-posterior flattening of the femur, and Poirier's facet was seen on the necks of the femora of F20 and F16. These were relatively common features in former populations and are considered indicative of activity over rough or hilly ground (Angel 1971, 85); squatting facets on the right tibia of F20 suggested the activity might have involved acute dorsi-flexion of the foot (Chesterman 1983; Bacon 1990).

The abraded condition of the bones precluded observation of many superficial bone changes, but there was possible reactive bone tissue on the right superior articular facet of the second cervical and possible hyperostosis on the spine of the fifth lumbar vertebrae of F21 (Ortner & Putschar 1985).

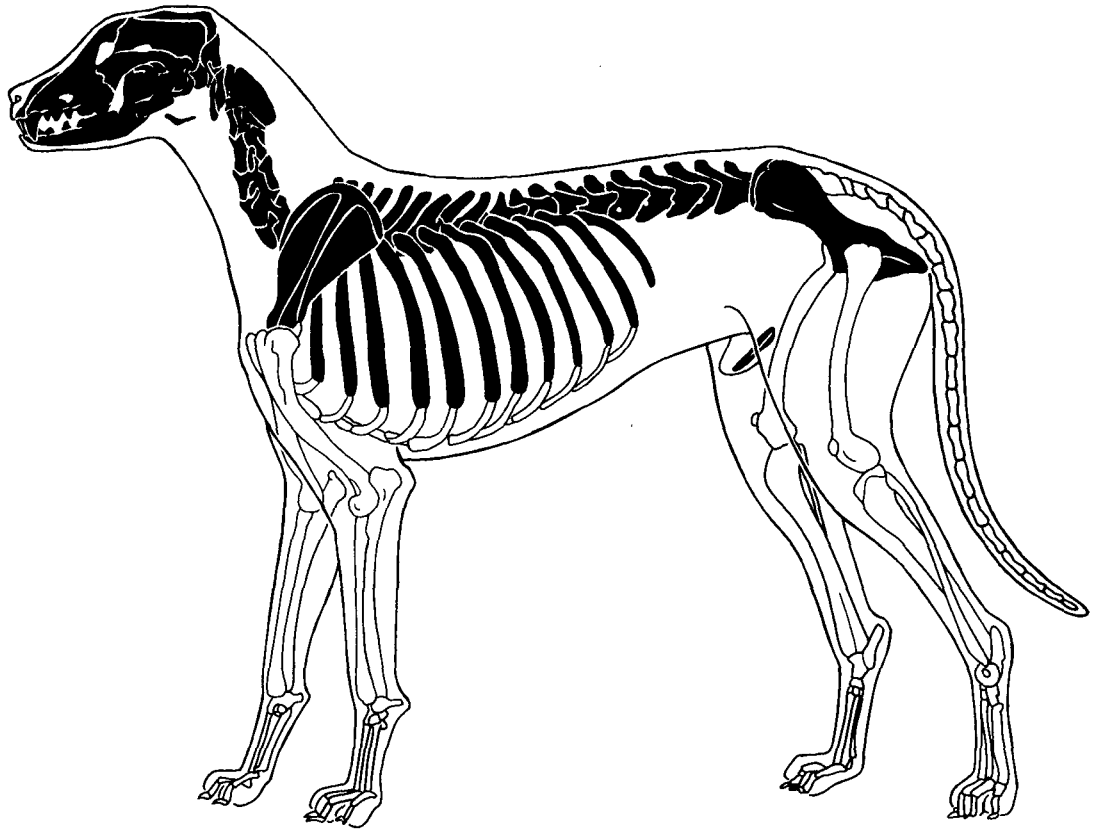
Owing to the fragmented nature of the facial bones, many teeth were loose, but caries was only found in eight out of the 83 teeth retrieved. Two teeth had been lost ante-mortem and the alveolar margin remodelled (F16). There was no evidence of calculus or periodontal disease. In F21, however, hypoplasia was seen on the upper incisors and all canines, suggesting a systemic disturbance at about three or four years of age.

### MAMMAL BONES

(A list of the bones recovered is in microfiche)

#### Finbar McCormick

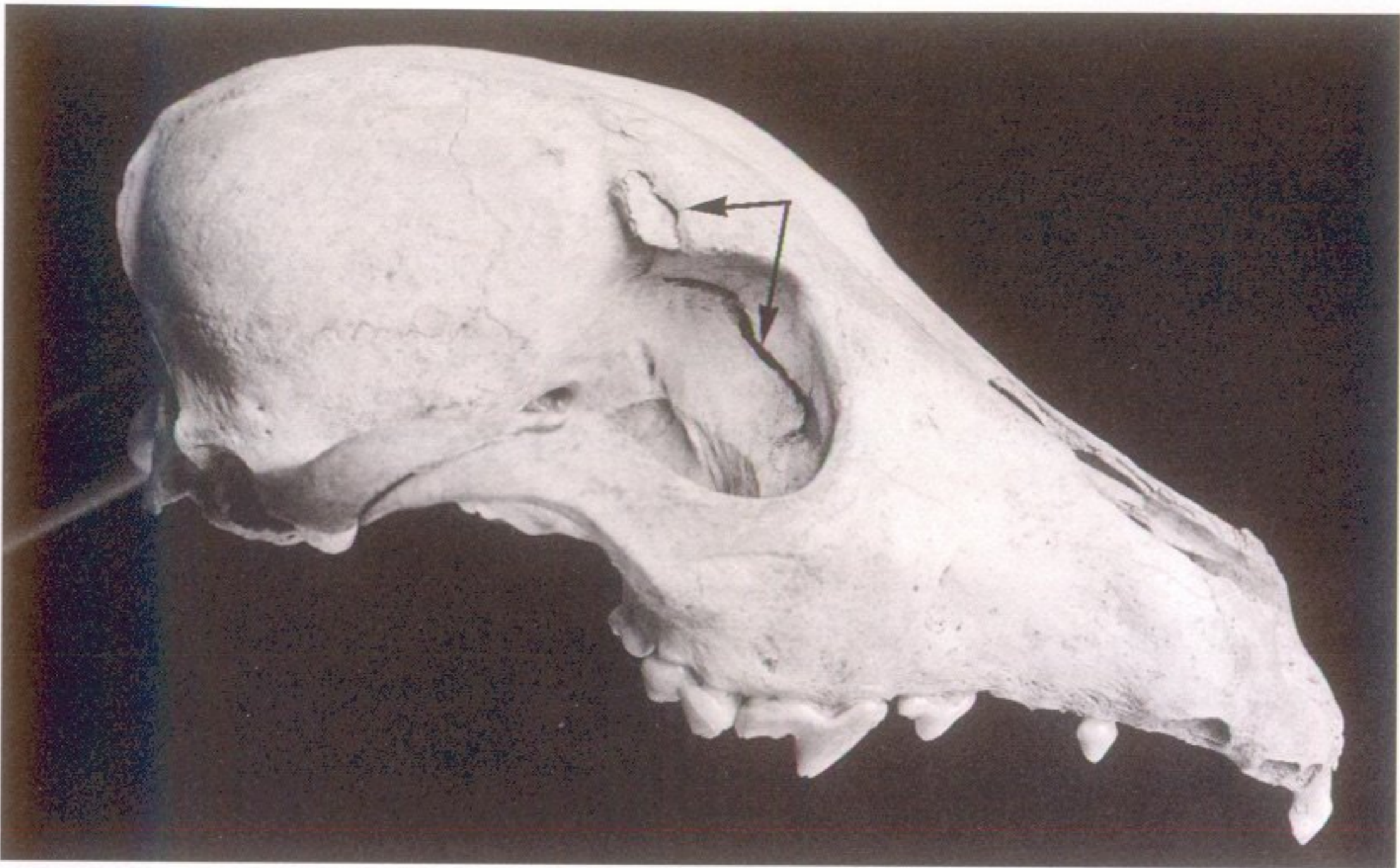
All the bones in the stone-lined pit (F22) were found in layer F39. The bones for the most part consisted of a small group of cattle, those of sheep/goat and an occasional pig bone. These were generally chopped into small fragments indicating that they represent discarded food refuse. The cat and dog bones present, however,



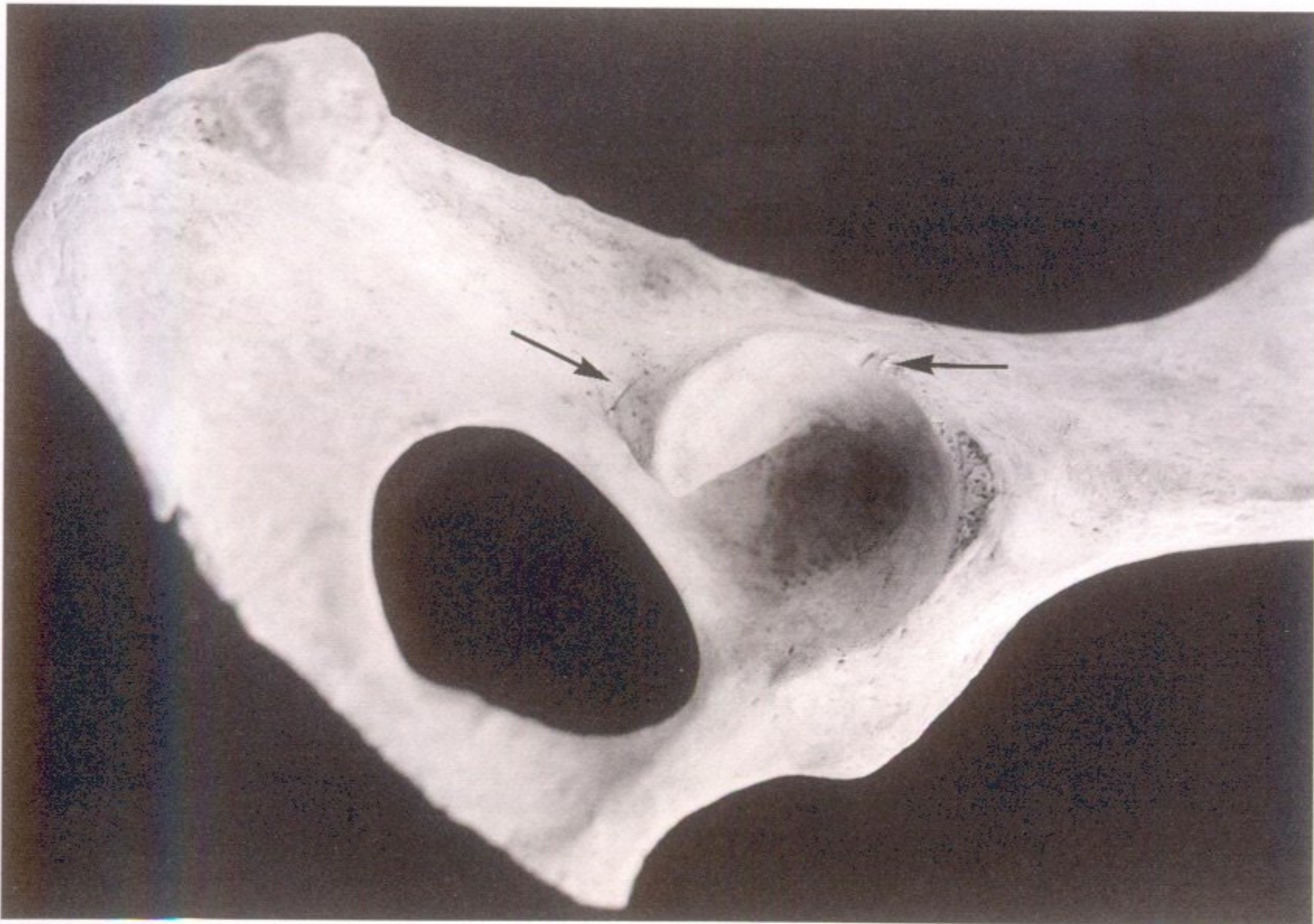
ILLUS 12 Parts of dog skeleton found in pit F22

are an unusual group. There were the remains of an articulated skeleton of a dog, comprising the head, vertebral column, sacrum, ribs, both sides of the pelvis and one scapula. The four legs and the tail are missing (illus 12). The dog had been killed by being struck severely on the forehead (illus 13A). Knife marks along, and next to, the lips of the pelvis acetabula indicate that the legs were cut off the animal (illus 13B). The dog would have had to be skinned in order to facilitate cutting, but it seems likely that it was not eviscerated before deposition as the penis bone was still *in situ*. Even more of the cat was removed prior to its deposition in the pit.

The removal of the limbs of the cat and dog cannot be accounted for simply by the suggestion that they had been skinned, or by the incomplete excavation of the feature, as the pit was entirely emptied. Skinning can sometimes account for knife marks on the pelvis. Such marks were present, for instance, on a dog pelvis from medieval levels associated with the Benedictine monastery at Iona (McCormick, forthcoming). In that instance, they were found on the shaft of the ilium, and represent the skinner's cutting of the pelt around the sphincter to avoid contact with excrement. Knife marks have also been noted on the greater trochanter of a cat femur from Rattray Castle in Aberdeenshire (Murray & Murray 1993, 204). The cutting at Pluscarden, however, represents the deliberate separation of the legs from the torso. It is difficult to avoid the conclusion that the limbs of the cat and dog were being removed for culinary purposes. The possible use of the limbs for any other purpose, such as the utilization of the bones as a raw material, is so remote that it can be discounted. Both the front and hind limbs would have contained a relatively substantial quantity of meat compared with other parts of the carcass. One must assume that this practice reflects a period of extreme food shortage.



ILLUS 13A Dog skull showing the impact of fatal blows



ILLUS 13B Dog pelvis showing knife marks indicating removal of the hind legs

## THE BIRD AND FISH BONES

## Sheila Hamilton-Dyer

Eight fish and 14 bird bones were recovered from layer F39. The fish were of at least three species: Cod (*Gadus morhua*), Hake (*Merluccius merluccius*) and Gurnard, probably Grey (*Eutrigla gurnardus*). The latter was represented by a single dorsal spine matching comparative material for a fish of about 300 mm total length. The Hake remains consisted of two, probably adjoining, caudal vertebrae. One of the Hake vertebra was vertically cut mid-centrum. The Cod remains were also of two caudal vertebra. There were four other fragments, including three bones of the right pectoral girdle of a gadoid fish, probably also Cod.

The bird bones consisted of five domestic fowl bones, one goose bone and eight passerine bones. The fowl bones were from at least two individuals, one probably a male, with a tarsometatarsus total length of 77.5 mm. Another tarsometatarsus was from a much younger bird. There were also an ulna, femur and sternum. The femur and sternum both showed knife cut marks. The goose humerus could either have been from a domestic bird or a Greylag (*Anser anser*). It had several small cuts round the distal articulation. One of the passerine bones was a femur of a Thrush-sized bird, the others all being corvid. These were probably from one individual, and compared favourably with Jackdaw (*Corvus monedula*). Both wings and the left leg were represented, but there were no foot, head or trunk bones. In view of the butchered dog and cat bones, the possibility that the bird was eaten must be considered. Only the breast of corvids is considered edible, all the other parts being discarded before cooking. However, as the head and feet were missing, and there were no cut marks present, it seems more likely that the bones do not represent food waste.

## FEATHERS FROM DEPOSIT F23 IN THE STONE-LINED PIT (F22)

## Ruby Cerón-Carrasco

The organic deposit from the stone-lined pit contained large numbers of fragments of possibly chopped feather, perhaps originally the contents of a cushion or some padding in clothing. Initial comparison with reference material donated by the Natural History Division of the Royal Museum of Scotland suggested that the feathers were probably those of a Pheasant. The results were then sent to Dr Karin Perremans of the Laboratory of Ecology & Aquaculture in the Zoological Institute in the Katholieke Universiteit, Leuven for her comments. Initial study indicates that the feathers displayed downy barbules possessing ringlike annuli which Dr Perremans stated '...could be encountered in the Tinamidae (Tinamiformes), the Phasianidae, the Tetraonidae, the Numididae, the Meleagridae, the Cracidae (Galliformes) and the Musophagidae'. It is very unlikely, however, that most of these would have been encountered in a Scottish context. The remains were then studied by means of a scanning electron microscope by Dr Perremans and the results corresponded completely with that of the Pheasant (*Phasianus colchicus*).

The presence of pheasant remains in a 15th-century Scottish context is extremely interesting. As far as the writer is aware, their bones have never been found in a Scottish medieval context and the earliest reference to their presence is in 1578 when Bishop Lesley stated that pheasants were present, but scarce, in Scotland (Lever 1977, 337–8). A Scottish Act of Parliament passed in 1594 stated that no one should kill 'Pheanis, foullis, partrikis' in or near the King's hunting parks (*ibid*). Pheasants were essentially park fauna, and a hunting forest existed at Pluscarden from the mid-13th century (Gilbert 1979, 339). Lever (1977, 335–6) noted that the pheasant was introduced into England before the Norman conquest and seems to have become quite common by the 12th or 13th century. In Ireland, the Anglo-Normans had introduced the pheasant by the 13th century (McCormick 1991, 49). It is quite likely, therefore, that examples of the pheasant, earlier than that noted at Pluscarden, will be discovered in Scotland.



## MICROFOSSIL ANALYSIS OF THE ORGANIC DEPOSIT F23 IN THE STONE-LINED PIT (F22)

## Coralie M Mills

A complete report on the material, which includes a description of the methodology, is presented in microfiche and the results of the analysis are given in Table 1. Preservation was generally very good and the concentration of pollen and spores in the sample was about 67,000 per ml. The pollen spectrum is dominated by cereal-type pollen, mostly of the *Hordeum* group but with some attributable to the *Avena-Triticum* group (groups as defined by Andersen 1979). The size of some damaged Gramineae grains indicated that they were of cereal-type, but these could not be attributed to a particular 'Andersen' group. In total, cereal-type pollen represented 71.0% of the Total Land Pollen (TLP), and wild grass pollen represented a further 13.2% TLP. About half of the pollen attributed to the wild grass group was at the upper extreme of the size range for this group (Andersen 1979), and it is possible that some pollen attributed to the wild grass group may be of the *Hordeum* group.

A range of taxa and habitat types are represented in the remainder of the spectrum, with trees, shrubs, heathland plants, weeds, ferns, and aquatics all present in small quantities.

*Discussion*

The organic deposit investigated here was found in close association with fragments of cloth, and close to a deposit of animal bones. The analysis of parasite ova (Pennington *et al*, *infra*) implies that human faecal matter is an important component of the organic deposit.

Cereal-type pollen is the predominant type in the sample, representing 71% TLP. Most of this was attributed to the *Hordeum* group (Andersen 1979) which comprises two cultivated species, *Hordeum vulgare* (barley) and *Triticum monococcum* (einkorn), and a number of wild grasses. The *Avena-Triticum* group (Andersen 1979) includes only one wild grass (*Avena fatua*), a weed of arable fields, and several cultivated species of wheat (*Triticum* spp) and oat (*Avena* spp). The presence of the *Avena-Triticum* type pollen in the Pluscarden deposit therefore indicates that at least some of the cereal-type pollen derives from arable activities. Given the presence of parasite ova indicative of human faeces (Pennington *et al*, *infra*), the most likely origin of the cereal-type pollen is from human food such as broth. Other pollen types may derive from the human faeces; aquatics may have entered through drinking water, and other taxa may have been 'contaminants' of food and drink. Microscopic charcoal particles may also have been ingested with food.

The absence of macroplant remains (Buckland, pers comm) means it is not possible to be certain which, if any, cereal plants are represented by the pollen. Given the large number of cereal-type pollen present, it is surprising that no bran fragments were present. High percentages of cereal-type pollen, in the range of 34–50% TLP, were found in a peaty latrine deposit at Worcester. Bran, however, was also present in the Worcester example (Greig 1981, 267). The Pluscarden deposit contained a much higher proportion of cereal-type pollen than the human coprolites from Warebeth Broch, Orkney, where *Hordeum* group pollen represented 1.1–5.6% total pollen and spores (Dickson 1989, 117, and Table 1). These coprolites contained animal hairs and bone fragments, and were interpreted as representing a largely meat-based diet (Dickson 1989). It is tempting to interpret the Pluscarden deposit as representing a restricted vegetarian diet at the Priory; however, the absence of the meatier parts from the dog and cat carcasses, also found in the pit, may indicate otherwise (McCormick, *infra*).

It is possible that some pollen in the Pluscarden deposit derives from sources other than the human faeces. These other sources could include water-seepage through the pit, and air-fall of pollen from the surrounding vegetation. The range of taxa indicate some heathland, woodland, grassland and wet areas in the vicinity. The possibility was considered that the decaying refuse in the pit, including the dog and cat corpses, may also have contributed some pollen. It is known that in medieval times, hounds were usually fed on bread or sometimes on broth (Cummins 1988, 26–7) and so it is possible that cereal-type pollen could derive from the dog's digestive tract. Such a find is not unprecedented;

TABLE I

Results of microfossil analysis of the organic deposit (F23) from the stone-line pit at Pluscarden. Percentages of the Total Land Pollen (TLP) and of the Total Pollen and Spores (TPS) are given:

	COUNT	PERCENTAGE	
		TLP	TPS
<b>TREES AND SHRUBS</b>			
<i>Alnus</i>	4	1.0	
<i>Betula</i>	1	0.2	
<i>cf. Castanea</i>	3	0.7	
<i>Corylus/Myrica</i>	13	3.2	
<i>Pinus</i>	1	0.2	
<b>HEATHS</b>			
Ericaceae undiff.	17	4.2	
<i>Calluna vulgaris</i>	6	1.5	
<i>cf. Erica cinerea</i>	1	0.2	
<i>cf. Erica tetralix</i>	10	2.5	
<b>GRASSES &amp; SEDGES</b>			
Gramineae	53	13.2	
Cereal-type,			
<i>Hordeum</i> group	239	59.3	
Cereal-type,			
<i>Avena-Triticum</i> group	37	9.2	
Cereal-sized,			
crumpled & undiff.	10	2.5	
Cyperaceae	1	0.2	
<b>HERBS</b>			
Caryophyllaceae	2	0.5	
<i>cf. Chrysosplenium</i>	2	0.5	
<i>cf. Crassulaceae,</i>			
<i>Umbilicus</i> type	1	0.2	
<i>Lotus</i> type	1	0.2	
<i>Plantago lanceolata</i>	1	0.2	
<b>TOTAL LAND POLLEN (TLP)</b>	<b>403</b>		
<b>AQUATIC</b>			
<i>Potamogeton</i> , section			
<i>Eupotamogeton</i>	2		0.5
<b>SPORES</b>			
Filicales undiff.	2		0.5
<b>UNIDENTIFIED POLLEN</b>			
Broken	11		2.5
Crumpled	13		3.0
Degraded	4		0.9
<b>TOTAL POLLEN &amp; SPORES (TPS)</b>	<b>435</b>		
<b>CHARCOAL PARTICLES</b>			
10–25 µm	163		
25–50 µm	92		
50–75 µm	80		
>75 µm	58		

Key: undiff = undifferentiated

*Hordeum*-type pollen has been found in an animal coprolite from Warebeth Broch (Dickson 1989, 118). The evidence from the Diptera (Skidmore, *infra*), however, suggests that the organic deposit was not in close contact with, or formed by, rotting carcasses so it is unlikely that the pollen is derived from such a source.

It is also possible that some of the Pluscarden pollen derives from refuse which has since decayed completely; the former presence of crop-processing waste, for example, could lead to an enrichment of cereal-type pollen and the introduction of other pollen taxa (Robinson & Hubbard 1977). The absence of macroplant remains at Pluscarden means this cannot be proved or disproved.

#### A BEETLE FAUNA FROM THE ORGANIC DEPOSIT F23 IN THE STONE-LINED PIT (F22)

##### P C Buckland

The sample was decidedly rich in insect remains, with large numbers of fly puparia (Skidmore, *below*), and many well-preserved beetle remains; one large spider, probably a *Tegania* sp., was also noted. The Coleopterous fauna (Table 2) is dominated by three species: *Tipnus unicolor*, *Rhizophagus parallelocollis* and *Quedius mesomelinus*. The presence of larval remains and ill-formed adults further suggests that this assemblage forms the core of the indigenous fauna. The flightless spider beetle, *Tipnus unicolor*, is represented by a minimum of 126 imagines. The species is largely synanthropic, ie lives in association with man, in the northern part of its range, although Crowson (1962) records it in oak leaf litter in woodland in south-west Scotland. Zacher (1933) suggested that *T. unicolor* feeds largely upon the faeces of rodents and small birds, but Woodroffe (1953) failed to find it in his extensive study of the insect fauna of birds' nests. Its frequent occurrence in barns, in straw and hay waste (Koch 1970), as well as in cereal debris (Howe 1955), may reflect its association with small mammals, but its fossil record, in moderate numbers in archaeological contexts, where there are few, if any synanthropic rodents – for example in southern Iceland (Perry *et al* 1985) – suggests that it may be more tolerant in its dietary requirements. In many archaeological deposits, particularly from the less liquid domestic ones, *T. unicolor* is usually the most frequent Ptinid, and its presence at Pluscarden is likely, at least initially, to be a result of its casual import by man. Osborne (1983, *ibid*) has suggested that, in archaeological contexts, it is more frequently found in features interpreted as cess pits.

Similar problems attend the habitat data available for the next most abundant species, *Rhizophagus parallelocollis*, with 56 individuals. Its vernacular name, the coffin beetle, associates it clearly with its most frequent occurrence, even if the actual food source remains open for discussion (Peacock 1977). The most widely quoted primary source, that of Megnin (1894), notes that the beetle appears in large numbers on exhumed corpses up to two years old, where it probably preys upon the larvae of Phorid flies (Johnson 1963). It is also recorded from beneath bark and in fungi (Peacock 1977). The beetle's apparent association with decaying bodies is also evident in the archaeological occurrences, where it appears in large numbers in a range of medieval burials (Buckland 1979; Girling 1981; Stafford 1971), but its presence in the York Roman sewer (Buckland 1976) would support its predation upon other larval Diptera, in this case probably the sewer flies, Psychodidae. The beetle, in fact, is not infrequent in urban archaeological contexts where particularly foul conditions might be assumed from other lines of evidence, for example in Anglo-Scandinavian York (Hall *et al* 1983), and medieval Winchester (Grove, *pers comm*). The above medieval burials are all within standing buildings and, despite the foul conditions which a rotting corpse might offer, the indication is one of relatively dry decay. *R. parallelocollis* is associated with the rove beetle *Quedius mesomelinus* in the lead coffin of Archbishop Greenfield (*obit* 1316) in York (Buckland unpublished), and this fairly eurytopic predator is also frequent in the Pluscarden material. Species of *Aleochara* are predatory on larval Diptera (Good & Giller 1991) and the mould-feeding Lathridiids and Cryptophagids are widespread in a range of mouldy plant debris rather than human waste.

Whilst the comparative data for the Pluscarden fauna largely concerns human burials, the insect fauna does not discriminate between man and other animals buried in similar conditions. Taken with the

TABLE 2  
Beetle fauna from F23 in the stone-line pit

COLEOPTERA		
Carabidae		
	<i>Trichocellus</i> sp. (burnt)	1
Leiodidae	<i>Catops</i> sp.	2
Ptiliidae	? <i>Ptenidium</i> sp.	1
Staphylinidae		
	? <i>Acrolocha sulcula</i> (Steph.)	1
	<i>Xylodromus concinnus</i> (Marsh.)	1
	<i>Philonthus</i> sp.	1
	<i>Quedius mesomelinus</i> (Marsh.)	16
	<i>Aleochara</i> spp.	6
	<i>Aleocharinae</i> gen. indet.	30
Rhizophagidae	<i>Rhizophagus parallelocollis</i> Gyll.	56
Cryptophagidae		
	<i>Cryptophagus scutellatus</i> Newm.	3
	<i>Cryptophagus</i> spp.	7
	<i>Atomaria</i> spp.	6
	? <i>Oortypus globosus</i> (Waltl.)	1
Lathridiidae		
	<i>Lathridius minutus</i> (L.) (group)	4
	<i>Corticaria</i> sp.	13
Ptinidae	<i>Tipnus unicolor</i> (Pill. & Mitt.)	126
Scarabaeidae		
	<i>Aphodius rufipes</i> (L.)	1

archaeological evidence, the greater part of the coleopterous faunal assemblage could be related to the partly butchered dog and cat found in the pit, but Skidmore's evidence from the Diptera is as much diagnostic by its absence as its presence. Any significant accumulation of carrion, even where buried, attracts a characteristic assemblage of flies (cf Smith 1986). Both relatively dry and wet stages of carrion decay (Diptera, Calliphoridae, Phoridae and Piophilids) are absent from the pit, suggesting that the butchered animal bones were relatively clean on disposal. The insect fauna appears to support the interpretation that the stone-lined feature was used as a cess pit.

Amongst the remainder of the fauna, only the burnt elytron (wing case) of *Trichocellus* sp. may provide a little additional archaeological information in that, as a wetland or peatland species, it is likely to have been introduced in peat or turves for burning.

#### ANALYSIS OF FLY REMAINS FROM F23 IN THE STONE-LINED PIT (F22)

##### P Skidmore

An interesting and highly specialized assemblage comprising 439 identifiable dipterous specimens was present in the organic deposit (Table 3). Virtually all the material consisted of puparia and there were few identifiable fragments of adults.

By far the most abundant dipterous present was the troglomorphic leptocerine sphaerocerid, *Terrilimosina racovitzai* (Bezzi). The sphaerocerid puparia present all appeared to be identical, but it is possible that other species were present since the puparia of most species remain undescribed, and even several which have been figured were clearly based upon misidentifications. The puparia of many species, in any case, are probably not distinguishable by external characteristics. The identification of the

Pluscarden material rests primarily upon only two unemerged males amongst five unhatched examples from a total of 403 puparia. The spermathecae of the three females agreed with *T. racovitzai*, but these are of less diagnostic significance since several species possess very similar structures. Three sphaerocerid wings, and 18 adult head capsules, also agree well with description and figures for *T. racovitzai* in Rohacek (1983). The wing size and venation, notably the slight prolongation of the costal vein, agree very closely with Rohacek's figure.

*T. racovitzai* is a specialized species having the reduced eyes typical of so many troglophilous alypterates. The male is unique amongst described European leptocerine sphaerocerids in the remarkable bifurcate median process and lateral curved teeth of sternite 6, features clearly visible on the male puparia from Pluscarden.

Whilst originally described from caves, *T. racovitzai* has also been recorded from mole burrows, but according to Rohacek (1983) the largest populations occur in cellars containing large amounts of decaying vegetable material, although it is also recorded from carrion.

Heleomyzids were present in modest numbers (19 empty puparia) but their generic identity could not be ascertained positively. Two species appeared to be present, both very close to *Heleomyza serrata*, but four were larger and had a densely spiculate 'anal segment', somewhat as in *Scathophaga* or *Hylemya* (but lacking the perispiracular papillae). Several heleomyzines are of subterranean habit (eg *Scoliocentra*, *Eccoptomera*, etc), and even the more eurytopic *Heleomyza serrata* (L.) often abounds in caves or the larger burrows of mammals. Like *T. racovitzai*, heleomyzines are not predominantly associated with carrion but exceptions are known (ie *Neoleria* and possibly *Scoliocentra* species).

TABLE 3

Dipterous remains from F23 in the stone-lined pit  
*Specimens present*

- 1 *Trichocera* larval head capsule
- 6 Psychodid pupal fragments
- 403 Leptocerine Sphaerocerid puparia (5 unhatched)
  - Terrilimosina racovitzai* (Bezzi)
- 3 Leptocerine wings, identical to above (as figured by Rohacek 1983)
- 18 Leptocerine adult head capsules identical to above
- 19 Leptocerine thoraces, probably as above
- 1 Phorid puparium (empty)
- 14 Heleomyzine puparia (empty) smaller with non-spiculate 'anal segment'
- 5 Heleomyzine puparia (empty) larger with spiculate 'anal segment'
- 5 *Fannia* puparia (empty) (probably *F. scalaris* (F.))
- 3 Muscid puparia, probably a *Helina* sp. close to *H. reversio* (Harris)

Fragments of eight *Fannia* puparia all appeared to belong to the same species, probably *F. scalaris* (F.). This species is a polysaprophage, which is very doubtfully recorded from carrion, but which probably prefers the dung of omnivores. As the popular name of 'latrine fly' suggests, this is commonly recorded from human faeces, and formerly abounded in privies, before the advent of the flush toilet.

Whilst the adults of *T. racovitzai*, and possibly the heleomyzines, could survive and breed in total darkness, *Fannia* species, so far as is known, require access to sunlight, the males having a highly developed nuptial swarming habit.

The six psychodid pupae infer at least a partially wet organic biotope, whilst the three puparia of predatory muscids, tentatively referred to the genus *Helina*, breed in rich humus soil.

It is noteworthy that, apart from the *Fannia*, there is a total absence of any heliophilous polysaprophagous elements in the fauna such as, for instance, *Piophilina*, *Madiza*, *Drosophila*, *Calliphora*, *Sarcophaga*, *Muscina*, *Hydrotaea*, *Musca* or *Stomoxys*. Indeed, the habitat inferred is one of accumulated faecal or decaying plant material lying in permanent darkness. None of the taxa present unequivocally points to the presence of carrion, and it is possible that any which may have been present may have been uncontaminated by flies when it was cast into the pit.

## PARASITE OVA FROM THE ORGANIC DEPOSIT F23 IN THE STONE-LINED PIT (F22)

(A complete report, including the methodology, is presented in microfiche)

J B Pennington, J P Middleton, C Nicholson & A K G Jones

A sample was taken from organic material associated with some woollen cloth found in a pit F22 to test the hypothesis that the cloth was used as an anal wipe before being discarded.

The sample contained abundant *Trichuris* ova. The counts averaged 20 ova per sample. The ova were not very well preserved – none had polar plugs. The mean size of the ova was 50.6 microns long (length minus polar plugs) by 27.5 microns wide (sample size 10). Eggs of this size are produced by the human whipworm, *T. trichiura*. The whipworm of rats and mice, *T. muris*, and that of pigs, *T. suis*, also produce eggs in this range. Other trichurid parasites found in the British Isles (*T. vulpes*, dogs, *T. ovis* and *T. globulosa*, sheep, goats and cattle) produce much larger eggs. No *Ascaris* ova were identified.

The number of ova observed indicates that the sample contains faecal material. The size of the *Trichuris* ova indicate that faeces was most likely to be of human origin, although other species may have been responsible.

It seems likely that the cloth associated with the sample was used for sanitary purposes. However, it is possible that the cloth may have been introduced to the feature independently of the organic matter and subsequently became incorporated with it.

## THE SOILS FROM PIT F22

(The analytical methods and a table of results appear in microfiche)

Stephen Carter

Of the nine samples analysed, eight are fills of the stone-walled pit, and one (F43) is from the backing to the wall face. Results of the pH, loss on ignition and phosphate tests are similar in all samples. The pH is alkaline (7.7–8.4), loss on ignition (and therefore organic matter content) is low (2.4–6.4 %) and easily available phosphate is uniformly high. The CaCO<sub>3</sub> content is variable; the highest pit fills (F35 & F36) are calcareous and very calcareous respectively, and F38 is slightly calcareous.

Because these are samples of pit fills, it is not surprising that their chemical characteristics do not match those of the surrounding natural soil and soil parent material. The priory was built on a terrace of fluvio-glacial gravel which supports freely draining soils of the Corby Association (Soil Survey of Scotland, 1:63360 Soil map, sheets 85 and 95). These soils are typically acid, and therefore non-calcareous, with low available phosphate (Glentworth & Muir 1963, 276). High, easily available phosphate ratings in the pit will be at least partly caused by the alkaline pH which promotes the creation of soluble forms of phosphate. Inputs of phosphate-rich organic materials are also present in F39. High CaCO<sub>3</sub> levels in certain layers are probably caused by the presence of mortar, which was noted during the excavation in F36. This in turn explains the high pH of the pit fill.

The chemical similarity of the wall backing (F43) to the pit fills reflects the mobility of soluble soil components; in this case out of the pit fill and into the pit walls. This mobility has probably removed chemical differences between the pit layers that existed when they were deposited; it is therefore difficult to determine the original composition of the pit fills. The fact that only the upper fills are calcareous suggests that building debris (mortar) was dumped only late in the filling of the pit. High pH conditions throughout the pit mean that bone should have been preserved in all contexts; it was found only in F39 and therefore only deposited at that stage of the infilling. It is clear that the apparent chemical uniformity of the sediments does not reflect the changing nature of the material being dumped into the pit.

## REPORT ON TEXTILES

Thea Gabra-Sanders

The organic material in layer F39 yielded 24 textile fragments and two plucks of raw wool. A catalogue of the material, along with a more detailed report, is contained in microfiche but the main attributes of the fragments are summarized in Table 4. The numbers of the fragments in the text refer to the catalogue and the summary in this table.

### *Description*

*Woven cloth of wool – plain weave* Ten of the fragments woven from wool are in the simplest weave, tabby, also known as plain weave (Table 4). These consist of either S-spun single yarn, of which there are four examples, or combined Z- and S-spun single yarn, of which there are six. The samples woven from combined Z/S-spun single yarn have a lower thread-count. They are medium/coarse woollens, of everyday quality, with a low thread-count, but of suitable weight for clothing or blankets.

Similar textiles are known from Fast Castle (Ryder & Gabra-Sanders 1992, 6) where fabrics made of entirely S-spun single yarn predominate. The same feature has been noted in textiles from Newcastle upon Tyne (Walton 1981, 193) and Perth (Bennett 1987, 159) while the material from Lübeck (Tidow 1982, 272) contained a very large amount of Z/S spun tabbies and S/S spun, but relatively few Z/Z spun tabbies. Likewise, material from Haarlem, in the Netherlands (Vons-Comis 1980, 66; 1982) and from London (Pritchard 1982, 199, 200, 205), contain both Z/S, Z/Z and S/S spun tabbies with Z/S fabrics the most common variety.

Felting was noted on several of the textile fragments. Felting can be primary or secondary but it is often difficult to differentiate between the two. Primary felting can arise by fulling, ie during pounding while wet in order to shrink, and hence to thicken and condense the fabric. Frequent washing results in secondary felting. Table 4 provides details of the finishing of the individual fragments.

*2/1 Twills* Nine wool textiles in 2/1 twill (Table 4), also known as three-shaft twill, are of the same quality as the plain weave. Four (5, 8, 16 & 21) have Z-spun single yarn in system 1 and S-spun single in the other. In one case (21) the Z-spun system forms the warp, identified in a reinforced selvedge (illus 14B). Another four samples (11, 14, 20 & 22) are worked from Z-spun single yarn, one of which, textile (14), has a reinforced selvedge. There is only one (13) textile woven from S-spun yarn. Details of finishing are shown in Table 4.

Similar 2/1 twills worked from Z/S, and of mediocre quality, are familiar finds on Scottish medieval sites, and might be described as typical, at least for eastern Scotland. For example, comparable fabrics are known from Fast Castle, from 13th- and 14th-century levels in Aberdeen (Bennett 1982, 197–8), and in considerable quantity from Perth (Bennett 1987).

Twenty fragments have cut edges (Table 4), a number of which had been oversewn to prevent fraying. Eleven have signs of sewing although all the stitching has disintegrated. This almost certainly indicates that flax thread was used. The stitch-holes and thread impressions indicate even stitching ranging from three to five stitches per centimetre. Of interest is a very worn fragment (4) which was patched with a second fragment (5) using a hemming stitch (illus 14A).

Measures have been taken to strengthen the selvedge with extra paired warp threads. In sample 14 the outermost six warp threads are paired; two pairs are in a dark colour and one pair in a lighter colour. Sample 21 is also reinforced, with three paired warp threads, but they are all the same colour. These strong selvedges would have been necessary for cloths which were to be heavily fulled and stretched on cloth tents.

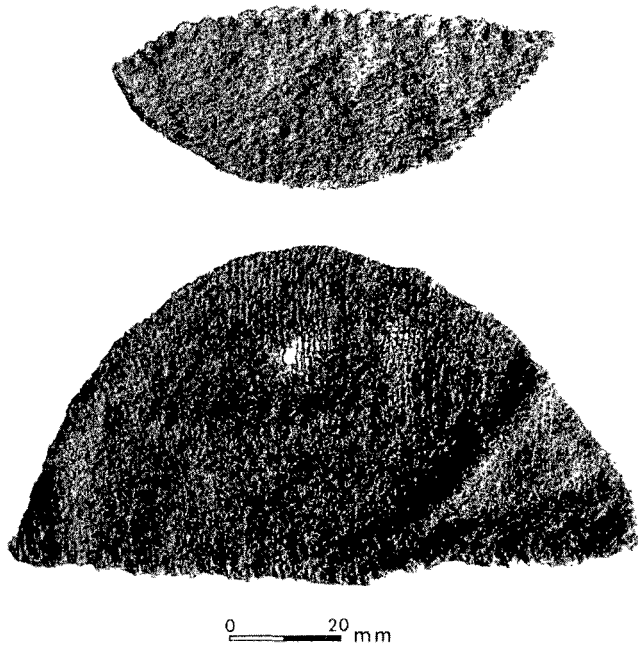
Two samples (16 & 25) display weaving faults. Sample 16 probably has a weft fault caused by incorrect treadle sequence. In sample 25 either a weft has been accidentally passed twice through a shed, or the warps were incorrectly tied. Of the two faults the former is the more common.

Sample 23 consists of two plucks of unspun wool. No staple formation (locks) is apparent, but both have formed a layer of loose felt about 1–2 mm thick, which appears to be neither manufactured felt nor natural cotting of a fleece. A possible explanation is the ‘pilling’ of clothing.

### *Conclusion*

All the textiles from Pluscarden are woollen, occurring in almost equal numbers of plain weave and 2/1 twill. They are similar to the cloth types found in Scotland, London, Germany and the Netherlands. A 15th-century date is possible for all pieces.

Most of the samples are fragmented and worn. The majority show clear signs of having been cut, sewn, and sometimes re-used. A few of them also show remains of a seam, hem or a raw edge overcast. The threadcount is average for everyday clothing, and the presence of weaving faults suggests that the fabric was woven at home and, in this case, possibly by the religious community.



ILLUS 14A Two fragments of brown woollen worn fabric: the smaller fragment (4) was sewn onto the larger fragment (5) (see fiche report for full description)



ILLUS 14B Fragment of brown woollen fabric with reinforced selvedge. It is felted on both sides (see fiche report for full description). The scale is the same as illus 14A

The general standard of the fragments is moderate. It would appear from contemporary reports (Innes 1867, 193) that in the 15th century bolts of cloth were being sent from east Scotland to the Low Countries to be dyed, and presumably finished. This suggests that at the end of the 15th century textile skills in the area were poorly developed. The textiles are best interpreted as discarded remnants of worn-out clothing and tailors' waste. Since faecal material has been found in the pit, containing what was almost certainly parasites of human origin, it seems likely that these textiles were used for sanitary purposes.



TABLE 4

## Catalogue of wool cloth fragments

Thread count is the number of threads per 10 mm: one value for warp x the other for weft.

When known, the warp count is given first and the same applies to the direction of the spin.

The amount of finishing is indicated as follows:

x slightly felted on one side  
 xx slightly felted on both sides  
 xxx felted on one side  
 xxxx felted on both sides

± approximately

Sample No	Dimensions in mm	Thread count	Spin	Weave	Finishing	Colour	Cut	Sewn	Other details
1	45 × 43	9 × 9	S × S	plain	xxx	lt brn stained	x	x	Seam
2	±50 × 35	6 × 6	Z × S	plain		brown			
3	65 × 40	?	Z × ?	?	xxxx	brown	x		
4	80 × 33	?	Z × ?	?	xxxx	brown	x	x	was sewn into No 5 with a hemming stitch; stitch holes present
5	110 × 59	9 × 10	Z × S	2/1 twill	xxxx	brown	x	x	raw edge overcast-stitch holes present
6	50 × 40	8 × 8	S × S	plain	xxx	lt brn stained	x	x	raw edge overcast
7	±70 × 70	5/6 × 5	Z × S	plain		lt brn		?x	
8	±35 × 27	6 × 6	Z × S	2/1 twill		lt brn		x	raw edge overcast
9	75 × 10	6 × 6	Z × S	plain	xxxx	brown	x		
10	102 × 10->4	7 × 7	Z × S	plain	xxx	brown	x	x	stitch holes present, raw edge overcast
11	±70 × 25	10 × 10	Z × Z	2/1 twill	x	lt brown	x		hole present
12	67 × 9->3	?	Z × ?	?	xxxx	brown	x		
13	108 × 10	11 × 10	S × S	2/1 twill	xx	brown	x	x	2 small hems-raw edge overcast stitch holes present
14	120 × 19->5	10 × 8	Z × Z	2/1 twill	xxxx	brown	x		high twist spin-reinforced selvedge
15	140 × 40->20	9 × 9	S × S	plain	xxx	lt brown stained	x	x	raw edge overcast
16	90 × 140	8 × 12	Z × S	2/1 twill	x	lt brown stained	x		high twist spin-weaving fault
17	140 × 110	7 × 7	Z × S	plain		brown stained	x	x	raw edge overcast, 2 holes present
18	185 × 85->7	6 × 6	Z × S	plain		brown	x		yarns unevenly spun
19	380 × 26->19	?	Z × Z	?	xxxx	reddish brown	x		torn
20	370 × 50->10	7 × 7	Z × Z	2/1 twill	xxxx	reddish brown	x	x	seam-stitch holes, raw edge overcast
21	185 × 30->5	8 × 6	Z × S	2/1 twill	xxxx	brown	x		reinforced selvedge
22	150 × 25->10	10 × 8	Z × Z	2/1 twill	xxxx	reddish brown	x		high twist spin
23	65		Z			lt brown			length of single yarn
24	70 × 5	?	Z × Z	?	xxxx	reddish brown			
25	85 × 25	9/10 × 7	S × S	plain		grey/ brown	x		weaving fault

## WINDOW GLASS

(A complete report and catalogue of the glass fragments is presented in microfiche)

## Barbara Ford

Thirty-five fragments of window glass were recovered, 33 of which came from F39 in the stone-lined pit. One fragment (35) was from topsoil, and a piece of painted glass (34) is a stray find, found in the vicinity of the steps at the south-west end of the claustral range, several years ago, by one of the monks of the community.

All the fragments in the pit are weathered, for the most part manifested in the form of varying degrees of brown staining. This is enamel-type weathering which often appears in patches, and in many cases is probably a result of contamination by iron or manganese compounds (Newton & Davidson 1989). The weathering gradually penetrates the glass until, as in the cases of (1) and (4) it goes right through to the core, often rendering the glass opaque.

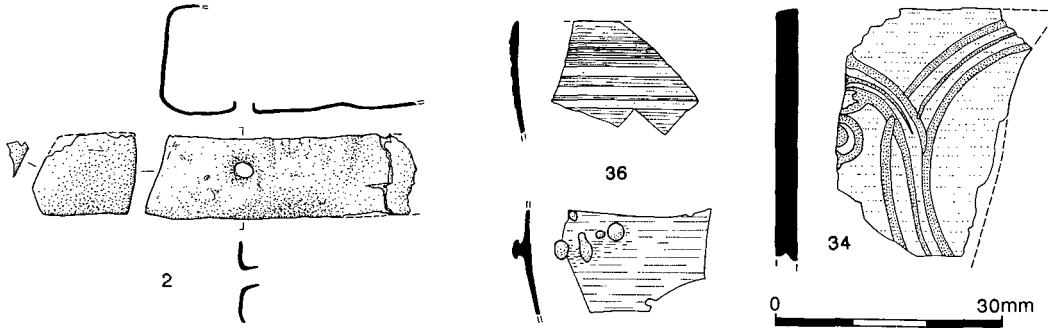
Many of the fragments of glass from the pit show weathering on the broken edges, suggesting that some of the pieces were broken before burial. Further breakages have taken place after burial. Where weathering allows identification, all except one of the fragments can be seen to have been originally plain clear glass with a green or pale green tint. The green tint is caused by iron impurities in the glass. The remaining fragment (5) is a pale blue glass. It has been 'pot-coloured', a metallic oxide having been added to the molten glass, producing a uniform colour throughout the glass. Combinations of copper, iron, and cobalt were used to produce different shades of blue. The dullness of the blue suggests a 14th-century date. Muted tones of blue were popular in the 14th century, contrasting with the rich tones of the previous period (Graves 1985). Examples of blue 'pot-metalled' glass have been recovered from a number of Scottish sites. Fragments from Lindores have been dated to the late 13th/14th century, while several fragments from Dunfermline have been assigned to the 14th century (Graves 1985).

There are two methods of manufacturing window glass: the crown process, and the cylinder or muff process. None of the fragments can be identified as being manufactured using the crown method (see Frank 1982), but several of the fragments were made using the cylinder method. This process involves blowing molten glass into a bubble which is lengthened by rolling and swinging. The ends are then cut off and the cylinder split longitudinally by a hot iron, and reheated. The glass is then flattened with iron tongs and a 'flattener'. Cylinder glass can be recognized by the shape of the air bubbles, which are elongated. However, due to weathering it is not possible to see any air bubbles in the Pluscarden glass. The long edges of the cylinder were rounded in the flame, and fragments with fire-rounded edges, such as 1, 14, 15, and 35, are indicative of cylinder glass (Harden 1961).

There are no complete panes, but 3 is part of a rectangular pane. Rectangular panes were often used along the borders of windows. Many of the fragments have grozed edges formed by trimming the glass with a 'grozing' iron. Several fragments have darker staining along the edges (9, 12, 14, 17 & 25). This is possibly as a result of a reaction with traces of lead staining left from lead window comes.

Only one fragment was decorated (34) and, as stated above, this was a stray find from the site (illus 15). It has brown enamel painted decoration, a technique used since the 11th century (Newton & Davidson 1989). The decoration comprises part of a stylistic trefoil and curved stems, a style commonly used in grisaille, a type of decoration formed by painting natural foliate motifs such as leaves onto plain glass. Grisaille originated in the 12th century and became popular in the 13th and 14th centuries. The style of decoration on 34 is typical of that used in the late 13th century and can be seen on fragments of late 13th-century glass from Coldingham and Elgin (Graves 1985). Windows decorated with grisaille often had medallions of colour such as blues and reds that can be seen in the mid 13th-century 'Five Sisters' window at York, the largest surviving example of grisaille (Archer 1985; Gibson 1979).

The glass from the stone-lined pit cannot be dated very accurately. The lack of decoration makes dating difficult. A 14th-century date has been suggested for the fragment of blue glass 5. The remaining glass from the pit varies in thickness from 1.5 to 3 mm. The thicker of these fragments, that is those over 2 mm in



ILLUS 15 Glass and metal. 34: fragment of corroded window glass with milky brown surfaces and painted decoration representing part of a stalk and trefoil 36: fragments of beaker; the rim sherd has grooved decoration and the body sherd has small applied prunts 2: copper alloy strip

thickness, have been more affected by weathering (1–4). These fragments could also date to the 14th century. The remaining fragments are a very homogenous group, varying in thickness from 1.5 to 2 mm, all of very similar appearance and weathering patterns. The quality of the glass suggests a later date, possibly in the 15th or 16th centuries. The weathering crusts on the glass indicate that much of the glass was broken before deposition. This suggests that they were broken fragments of disused glass, from windows of various dates, which had been disposed of in the pit in the 15th or 16th century.

### *Vessel glass*

Two very small fragments of a vessel with a straw-coloured tint were recovered (36) from unknown contexts by a member of the present Benedictine community prior to the excavation. The glass is very fine and heavily bubbled and the fragments appear to be parts of a beaker (illus 15). The yellowish tinge is due to impurities in the glass. The body of the vessel is decorated with small applied prunts. The technique of dropping molten blobs of glass onto the body of a vessel was brought to Europe in the 14th century (Vose 1975). It is thought that these blobs may have had some religious significance, being put on glass to ward off evil spirits (Vose 1980). Apart from being decorative they also improved the drinker's grip on the vessel. The beaker was probably imported into Scotland from one of the European glass houses.

### THE MEDIEVAL POTTERY

(A catalogue of the stratified material is presented in microfiche)

### Charles Murray

#### *Pottery from the excavation*

The quantity of pottery from the excavation at Pluscarden is exceedingly small, amounting to only 23 sherds, 10 of which make up most of the base and some of the lower portion of a single jug (Cat No 1). This was found in rubble (F30) that probably originally supported a flight of steps in Area 6. The remaining sherds are undiagnostic, being mainly body sherds, although one was the lower part of a strap handle (Cat No 2).

With the exception of one sherd which is possibly East Anglian in origin (Cat No 4), the remaining pottery would appear to be of local manufacture. However, the absence of kiln evidence and the lack of

scientific analysis makes this conclusion speculative. One fragment (Cat No 2) is similar to a fabric and vessel type noted from excavations in Elgin.

The dating of the pottery would appear to range between the 13th and 15th centuries, although it must be borne in mind that this dating is based on the fabric, glaze and appearance of the sherds, rather than on the more diagnostic portions of pots such as rims, handles and bases. Similarly, it is difficult to be definite about the vessel types, but most appear to have been jugs.

In only one instance did sherds from different site features, burials F16 and F21, conjoin (Cat No 6), demonstrating the contemporaneity of these features.

*Unstratified pottery* A large assemblage of unstratified pottery was gathered by the current Benedictine community at Pluscarden between 1948 and 1990. Although this cannot be related to any particular area of the Abbey complex, it sets the pottery from the excavation in a wider ceramic context and demonstrates that the quantity, range and quality of pottery was greater than the excavated material would appear to signify.

In all, the assemblage comprised some 650 sherds. The majority of these were very fragmentary, amorphous body sherds, probably local in origin. About 60 sherds, however, merited closer examination.

*Local products* The main vessel type represented is the jug, but a range of other forms was found. Portions of possibly as many as three urinals are evident. There is also a fragment of a dripping pan. A very fine rim sherd appears to derive from a beaker-type vessel also recognized in Aberdeen (Murray 1982, 146, Illus 81, Nos 276–281). Highly decorative forms are represented by parts of two very distinctive anthropomorphic face-mask jugs; on stylistic grounds one of these would appear to date to the 13th century, while the other could be as late as the 15th/16th century, although both are of a similar fabric and glaze type.

Like the excavated pottery, this unstratified local material appears to range in date between the 13th and the 15th/16th centuries; but in this instance the dating can be based on the rim and handle forms present.

*Imported pottery* A small amount of the assemblage, some 15 sherds, derive from imported vessels; all being from Scarborough Ware products. It is hardly surprising that Scarborough Ware should be present in this assemblage as it is ubiquitous on almost all excavated sites of medieval date in north-east Scotland. Several Scarborough Ware types are evident, ranging from the distinctive thick-grooved rod handle type associated with face-mask jugs, to a shield piece from a Knight jug. The sherds include both the fabrics identified by Farmer (1979) and date to the 13th century.

#### METAL AND STONE OBJECTS

- 1 A roughly shaped shale disc, with a depression in the centre of one side, probably the beginning of a perforation.  
Diam 48 mm; Perf 7 mm; th 6 mm  
From layer F39 from the stone-lined pit.
- 2 (illus 15) Two (joining) fragments of thin copper alloy sheet, possibly part of a strap. The smaller of the two pieces is curved, and the larger has a perforation made by piercing with a pointed object from the front. At each end of the larger fragments is an area of solder, with a copper alloy patch affixed to one, the result of an attempt to mend a break or to strengthen an area which was cracking (Amanda Clydesdale, pers comm).  
Larger fragment: 36 mm × 11 mm.  
Smaller fragment: 13 mm × 10 mm.  
From layer F37 in stone-lined pit.

## DISCUSSION & CONCLUSIONS

Finbar McCormick

The principal objectives of the excavation at Pluscarden were to ascertain if the nave of the church and the western range of the cloister had ever been built, and if so, to investigate such remains, prior to the construction of a modern building in the area. Substantial foundations, in places shattered by the weight of the walls they once supported, indicated that the church nave had indeed been constructed, thus ending speculation to the contrary which had begun as far back as the middle of the 18th century (Flavell, above).

Extensive excavation, however, demonstrated that there was no evidence for the construction of a western claustral range in the monastic complex. This is unsurprising given the rule by which the Valliscaulians lived. This Order founded Pluscarden which remained in its possession until its adoption of the Benedictine ideal in 1453/4. Flavell (above) has shown that the Valliscaulians were not allowed to keep large numbers of lay brothers and that in 1205/6, for instance, no house of the Order was allowed to have more than 20 monks, including lay brothers. Western domestic ranges are generally thought to have been built to accommodate the large numbers of lay brothers which were a feature of other Orders. When one considers that the present community of 25 Benedictine monks are accommodated in the eastern wing of the medieval claustral range at Pluscarden, it can be appreciated that there was little necessity for the building of a western range in the medieval period.

The excavation, however, produced evidence for a fairly insubstantial building in the area usually occupied by a west range. All that remained of the building was the basal course of a wall (F4) which separated two paved areas. A sill in the wall indicated direct access between both areas. A jamb stone suggests a 16th-century date for the structure (see above). The absence of either foundations or foundation trenches for the remainder of the building confirms the unsubstantial nature of this edifice. Its function is unknown, but it could be similar to the small, late medieval building that was built against the outside of a wall which demarcated the western side of the cloister at Dryburgh Abbey. Given its probable 16th-century date, it is likely to be part of the building campaign undertaken by Alexander Dunbar, prior at Pluscarden in the years immediately preceding the Reformation, who was responsible for the building of the vestry off the north side of the choir (Flavell & Fawcett, above).

A further building complex was investigated at the south-eastern edge of the eastern range. It was built in two phases with a sherd of 14th/15th-century pottery being found within the fabric of the secondary wall.

A group of four burials, three of which were excavated, lying to the west of the remains of the 16th-century building, is problematical. The burial areas of monasteries were usually located to the east and south-east of the choir, and expansion of the graveyard would be expected in the area to the north of the church. The service trench excavated by Dom Ambrose Flavell (above) produced no evidence for burials in the latter area. Radiocarbon dating suggests a 15th-century date for the burials.

Of the four skeletons noted three were excavated. All were women, ranging in age between about 17 and 45 years (see Lorimer, above). The bones were in relatively poor condition and did not provide any evidence for the cause of death. It seems likely, however, that they were all buried at the same time and this suggests that death was sudden, due, perhaps, to a contagious and fatal disease, or to some natural disaster that left no traces on the skeletons.

A 15th- or 16th-century stone-lined pit post-dated the burials. It was probably roofed, with

an opening at its rounded eastern end. The absence of stones within the pit fill suggests that this roof was of wood. It is also likely that the opening was originally covered with some form of lid or trap-door. This is implied by the fact that the great majority of the fly material present in the organic from the entrance area consisted of *Terrilimosina racovitzai* (Bezzi) which generally inhabits dark environs such as caves and mole holes, and which is especially abundant in cellars containing large amounts of decaying vegetable matter (Skidmore, above).

Once the pit became partially silted, but still retained its roof and probable trap-door, it was used as a refuse dump and cess pit. Its original use, however, is unknown. It can be assumed that the monastic complex at Pluscarden, with its adjacent river, would have had a reredorter system in its original design and it is extremely unlikely that the pit was constructed as a cess pit. Even if the reredorter system became blocked at a later stage in the Priory's history, it is unlikely that the pit would have been constructed for this purpose as it is too far from the domestic buildings. It is more likely that the pit was constructed originally for storage. The use of a hole for such a purpose suggests that coolness, rather than dryness, was the primary attribute being sought by its construction. If this was the case the storage of dairy produce, such as cheese and butter, may have been its primary function.

The foul nature of the interior of the pit when it was used for defecation, and the dumping of animal carcasses, is clearly reflected in the beetle and fly assemblage present (Buckland, above & Skidmore, above). The presence of *Trichocellus*, which is a wetland or peatland species, suggests that peat, for burning, may also have been in the pit.

The dismembered, and sometimes butchered, remains of a cat and dog must represent a period of acute hunger at the site. It should be added, however, that a small quantity of bones of the usual meat-providing domesticated animals, as well as those of bird and fish, were also present in the layer.

An organic deposit of human faecal material contained a range of environmental material including pollen. This indicated the presence of cereal, most likely representing broth, but the type of cereal could not be identified (Mills, above). The faecal material included 24 scraps of woollen material, presumably used as anal wipes (Gabra-Sanders, above). Most of the fragments were well worn, and clearly represented old clothing or blankets, cut up and used for this toiletry purpose. In, and around, the faecal material was a scatter of broken window glass fragments, originally clear glass with a green tint (Ford, above). The only exception to this was a fragment of pale blue glass, which was probably also of 14th-century date. The pit also contained a few fragments of 14th- or 15th-century pottery.

Stone-lined pits are also known from other Scottish medieval sites. At Threave Castle, Galloway, a stone-lined pit was found immediately outside the wall of a house within the outer castle enclosure (Good & Tabraham 1981, 102). Its function was unknown but it had been used as a rubbish pit after its original function had fallen out of use. At Auchindoun, in Moray, a stone-lined pit was discovered underneath the cellar floor of a tower house. The excavator suggested that it was too small to be a pit-prison and that one possible use was that 'it may have served as a food store, where perishable food stuffs were kept' (Wordsworth 1990, 171). Like the Pluscarden pit, it seemed ultimately to have been used as a dump and, coincidentally, contained the almost complete skeleton of a cat and the remains of two dogs as well as some bones of the usual domesticates, ie sheep and cows.

The excavation produced very little stratified pottery. A larger assemblage of pottery, however, has been collected by the present Benedictine community since 1948. The great majority of the assemblage was locally made, and dates from the 13th to the 15th centuries (Murray, above). The pottery consisted mostly of jugs, although beakers, urinals, and a dripping pan were also

present. Nearly all the imported pottery consisted of Scarborough Ware, a type found in almost all medieval sites in north-east Scotland.

The excavation provides little information concerning the diet and livestock economy of the inhabitants of Pluscarden. The bones from the stone-lined pit, as well as providing evidence for severe food shortage, indicate that its inhabitants reared, or had access to, cattle, sheep/goat, and pig. A pig mandible from a very young individual was, at most, a few weeks old at time of death; this implies that pigs were being reared on the site. Chickens were also kept; the goose present in the pit may have been either Greylag or domesticated stock. A small bird, possibly a Jackdaw, was also present but it is not certain if this represented food refuse.

As Pluscarden is only about 9 km from the coast it is not surprising that marine produce were included in the diet. The stone-lined pit produced bones of Cod, Hake and Gurnard, while an oyster shell was present under the base of wall F27. Cod seem to have been commonly traded to inland rural sites in medieval Scotland as it was also found, along with Haddock, at Smailholm Tower, Roxburghshire, some 40 km from the sea (Barnetson 1988, Fiche 3 G.1). Shellfish were also traded with inland rural sites and oyster has been noted at Coull Castle, Aberdeenshire, which is 45 km from the sea (Simpson 1924, 92). The faeces present in the stone-lined pit provided evidence for the consumption of cereals at the site.

It is unlikely that the Valliscaulian monks at Pluscarden ever engaged in farming on as large a scale as the sheep rearing, for the woollen trade, carried on by the Border monasteries. Flavell (above) has noted that the Order did not have the large army of lay brethren needed for such activity and that the monastery's income depended on rents, tithes and payments in kind. Amongst these were mining and fishing rights as well as the ownership of several mills.

## ACKNOWLEDGEMENTS

I would like to thank the Benedictine community at Pluscarden for their kindness and help during the excavation. I would also like to thank the excavation team: Martin Crowther, Chloe Dondos, Dom Ambrose Flavell, Jamie Hamilton, Jon Henderson, Kay Ibbetson and Cairine Sutherland. The illustrations are by Christina Unwin and Sylvia Stevenson. Ruby Cerón-Carrasco would like to thank Dr Karin Perremans for providing identification for the feathers.

Richard Fawcett adds: In preparing the final version of the architectural report I owe much to the kindness of Dom Ambrose Flavell, who was tireless in showing me around the abbey and discussing its architecture – although the views expressed here are entirely my own.

The report was edited and submitted by AOC (Scotland) Ltd. Historic Scotland arranged and provided funds for the excavation, for the post-excavation analyses and for the publication.

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*This paper is published with the aid of a grant from Historic Scotland*