# Recent excavations at Dunfermline Abbey, Fife

the late T M Robertson, G H Williams, George Haggarty and Nicholas Reynolds\*

# 1 INTRODUCTION

by Nicholas Reynolds

Christ Church, Dunfermline, which lies towards the SW of the town, was founded by Queen Margaret c 1070 as a daughter house of Christ Church, Canterbury. The nave of the 12th-century church erected by her son David I survives complete, adjoining to the W the 19th-century church presently in use. To the S lay the claustral ranges. The church, dorter and frater were built around three sides of a cloister in the normal fashion, but the arrangement of the W side of the cloister is obscure. There is a south-western range built at an angle to the rest of the buildings and joined to the frater by a vaulted gatehouse. These buildings, their masonry dating from the 13th or, perhaps more likely, 14th century, were later used as a palace and continued as a principal residence of the Scottish kings until the 17th century. The peculiarities of plan are dictated in part at least by the fact that the Abbey is built on sloping ground at the edge of a steep ravine.

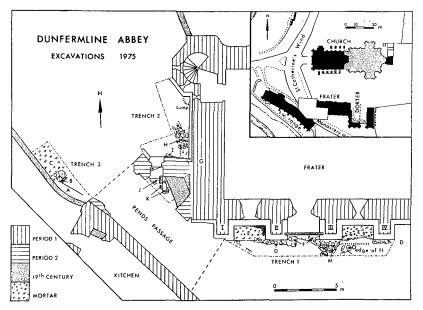


Fig 1 Dunfermline Abbey: excavations 1975

<sup>\*</sup> Scottish Development Department (Ancient Monuments), 3-11 Melville Street, Edinburgh.

Excavation in the church and the southern ranges was conducted by the then Office of Works in 1916-7, and within the nave the remains of an early church were recovered (fig 3). The rather tenuous plan recovered from the surviving stonework appears to indicate two phases of building. First, a small oblong cell with a square western tower, perhaps pre-Conquest; and then to this there was added a square choir with a rounded apse. This distinctively romanesque addition may well be attributable to the arrival of Queen Margaret. The remains of these buildings are preserved below ground, and the plan is indicated in the paving of the existing nave.

The excavations described below were occasioned by the continuing work of preservation of the Abbey by the Department of the Environment. In 1970 the vaulted gatehouse (the Pends) was closed to vehicular traffic to allow reconstruction work after a lorry had come too close to one of the arches; and in the course of this work it was observed that the present roadway through the Pends lay some 0.45 m-0.60 m above the medieval level. At the NW pier of the Pends, 0.45 m below road level, the original splayed plinth, smooth and finely worked, was seen to survive, continuing NW along the inner face of an enclosing wall, now removed. On the NE face of this pier, the remains of a corresponding strip buttress could be traced in the walling overhead, some 6 m above ground.

The original threshold level of the small wicket doorway within the Pends was also traced 0.45 m below the payement, and it is clear that, when the level was raised, both back and front arches were lifted by 0.60 m, and additional scuntion stones inserted above the original springing. Against the inner scuntion of the main W archway a finely worked quadrant-base or bollard was found, apparently devised to keep passing carts off the archway.

It became clear in the course of this work that the eastern arch and possibly the whole eastern half of the Pends was a secondary structure inserted against the SW corner of the frater. On the SE there is a continuous risband joint between it and the adjoining frater buttress. Contrary to the plan in the RCAMS Inventory (1933, fig 240), the arched passageway across the W bay of the frater is of secondary date. The similar feature in the next bay to the E is rightly shown as an insertion, later than the first, but probably not 'modern'.\*

In 1972 the Pends was finally closed to motor traffic, and a scheme was put forward for the lowering of the passageway to its original level, giving a more satisfactory view of the intended appearance of the gate. To establish this level correctly, excavations were conducted along the sides of the Pends by Mr Robertson, and their findings are here discussed in the report later prepared by Mr Williams.

#### 2 **EXCAVATIONS IN THE PENDS, 1975**

by the late T M Robertson and G H Williams

The excavations in 1975 were carried out by the late Mr T M Robertson on behalf of the Department of the Environment. Work concentrated on the sides of the modern road in the area of the Pends or gatehouse and the buildings adjacent to it, with a view to landscaping the area. removing the large quantities of post-medieval accumulation down to the level of the later medieval ground surface, exposing the full height of the late medieval facade. While the primary purpose of the excavation was to locate the original ground surfaces, some inconclusive evidence was obtained relating to the complex building history of this part of the Abbey.

Three trenches were opened. Trench 1 was intended to investigate the buttressed S wall of \* Information from Mr George Hay, the Architect responsible for the 1970 restoration.

the frater block; trench 2 the W wall of the frater block and turret stair, the N wall of the Pends and pedestrian archway; trench 3 the site of the NE wall of the SW or Palace block.

## Post-Medieval

The present ground surface falls regularly over the area excavated, by 1.5 m from NW to SE. The upper surviving medieval levels fall irregularly by 1 m over the same distance, from 1.5 m below ground level on the NW to 0.4 m on the SE. The intervening post-medieval levels were a variable and complex mixture of midden material, building rubble and drainage systems in which very little structural detail was identifiable. A series of post-medieval buildings in the area is attested both by documentation and by a series of cuttings for pent roofs, etc, in the wall of the Pends and frater, but little definite correlation was possible between these and the excavated remains. Certain well-defined features (M, N and O), stratified below this amorphous material, and probably 16th or 17th century in date, are considered below with the medieval period.

# Medieval

Flooding and the narrowness of the trenches precluded complete excavation, and full interpretation of the medieval levels is, therefore, impossible – particularly in trench 1.

The architectural history of the area investigated is both complex and imperfectly understood (RCAMS 1933, 113-20). Three main building periods can be recognised from the standing structures. Period 1, the building of the frater and the SW range. Period 2, the addition of the Pends linking the frater and SW range. Period 3, the modification of the SW range to form a Royal Palace, at the turn of the 16th and 17th centuries. Periods 1 and 2 levels were well-represented and identified over much of the area, but identification of features belonging to other periods was generally much less secure.

#### Period 1

In trench 3 the line of the destroyed NE wall of the Palace block was located at an average depth of 1.5 m, represented by a line of ashlar blocks running diagonally across the SE of the trench (A). A badly ruined wall face (B) was discovered running NE at right angles to A, just before A disappeared into the SW baulk. Behind this wall and filling the NW part of the trench was a solid mass of mortared masonry (C). This was of large enough extent to represent a floor rather than a wall but no trace of a NW internal wall face (corresponding to B) was found. The remains were assumed to belong to period 1 rather than period 3 rebuilding, and possibly represent the remains of a porch projecting from the SW range. An associated but undated ground surface occurred at a depth of 2 m, which the excavator thought to be the period 1 ground level.

The foundations of the period 1 frater were well preserved in trench 1. Buttress I was not fully investigated, but buttresses II, III and IV were found to be underpinned, below the lowest ashlar course, by rubble foundations (D) at a depth of 0.8 m projecting on average 0.4 m into the trench. Similar foundations were traceable between buttresses I and II, and between II and III in front of the modern wall which blocks the entrance to the frater. These foundations were partly obscured by a spread of solid mortar and rubble chips (E) which covered the area between buttresses I and II, III and IV. The spread between I and II showed signs of burning.

At the threshold of the original entrance rough mortared slabbing (F) occurred at a depth of 0.55 m, obscuring part of the lowest ashlar course. This either represents the remains of a step, or suggests that the period 1 ground surface was higher than the bottom course of the plinth, as was the case in period 2.

To the S of these foundations were a number of probably later features extending to a lower level (see below M, N and O). It was not certain whether these cut through the foundations or took advantage of the fact that they never extended into the S half of the trench.

Corresponding period 1 levels were not reached in trench 2.

# Periods 1 and 2: Details of Buried Ashlar

In trenches 1 and 2 post-medieval build-up had preserved a large area of ashlar facing, including a number of masons' marks, in a far better condition than that existing above ground. The S wall of the frater rose above a stepped plinth of three orders, with a string course above this. Only the bottom two orders of the plinth were represented on the W wall.

In trench 2 the N wall of the Pends was uncovered to its lowest course, revealing a stepped plinth of two orders. At the junction of the Pends and frater wall the plinth of the former was missing, revealing an earlier wall and plinth (G) at right angles to and continuous with the frater block. This indicated a period 1 structure contemporary with the frater, possibly either unfinished or demolished when the Pends was added, and part of whose structure is incorporated into the Pends.

#### Period 2

In trench 2, at the level of the lowest course of the N wall of the Pends, a compact, level spread of rubble (H) was found at a depth of 0.75 m. Occurring well above the bottom of the period 1 ashlar face, but at the level of the bottom of the period 2 face, this could be attributed reasonably securely to period 2, and probably represents part of the footings of the Pends. A drain (I) probably medieval in date led under the Pends wall to connect up with the underlying drainage system. To the N of H a Victorian sump and other disturbances appeared to have destroyed the period 2 levels. No further excavation was carried out in this part of trench 2.

More massive stone foundations (J) were discovered below the destroyed paving inside the pedestrian archway. This flagging, preserved under the pedestrian archway, gave the position of the period 2 ground surface at the top of the lowest order of the plinth. Any trace of this surface or associated foundation trench etc had been swept away by later disturbance.

Just inside the archway the lowest courses of a stair (K) were preserved. This originally led up into the frater, its upper courses having been obscured by a modern rebuilding.

In the W of trench 1 a layer of clay and builders' debris ((L), not shown on plan) occurred at a depth of approximately 0.8 m. Being stratified above the rubble foundation of the frater it was thought by the excavator to have been deposited at the time of the building of the Pends.

No features associated with period 2 were discovered in trench 3.

# Late Medieval/Early Post-Medieval Features

In trench 1, above layer L, a lead pipe was discovered – approximately 7 m long and 0.08 m in diameter - running E to disappear into the baulk opposite buttress III. In the W part of the trench it was sunk into a small trench (not illustrated); but opposite buttress III it was set in a groove let into a flat-topped mass of stones (M) extending across the trench from and at the

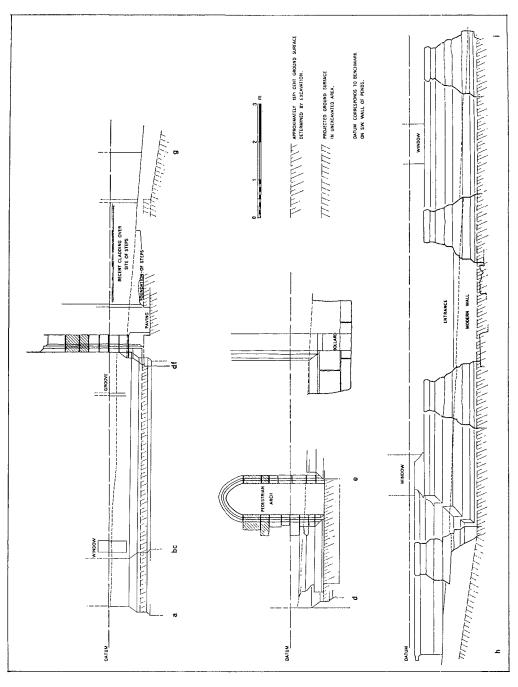


Fig 2 Dunfermline Abbey: masonry footings

same level as the foundation material. To the E of this and S of the foundations was a trench (N) filled with black silty material and running parallel to the frater wall. In the bottom of N a rubble drain (O) was discovered at a depth of 1.1 m. Due to flooding it was not possible to fully excavate and record O.

The date of these structures is uncertain. The excavator thought that they were of 16th-17thcentury date, but they could not be securely associated with the period 3 building phase. No features of a similar period were identified in trenches 2 and 3.

# DISCUSSION

The gatehouse (period 2) is clearly an addition to and of a later date than the frater and SW range (period 1). The small piece of wall face preserved behind the Pends wall in trench 2, (G), could represent the remains of an unfinished or remodelled period 1 gatehouse (see Note 1). On architectural grounds, the building or rebuilding of the Pends can be seen to have taken place some time after the period 1 work. A grant of 1329 provides a terminus post quem for the construction of the frater (RCAMS 1933, 114). This would not be out of keeping with the architectural details of the W window and the scroll moulding of the arch supporting the hanging passage. The period 1 work in the SW range is similar in style and must be contemporary with or not much later than the frater. The Pends would seem to be a construction of the later 14th or 15th centuries.

Unfortunately this interpretation is difficult to correlate with the dating of the pottery associated with these building phases. However, little of the pottery was securely stratified, and that which was was fragmentary and consisted mainly of body sherds making uncertain any conclusions based on it.

Only one sherd was associated with period 1 (group 1), and that was insecurely associated with wall A in trench 3. It could not be dated more precisely than the 13th or 14th century, which can be seen as broadly consistent with the historical record. However features H and L, which the excavator associated with the building of the Pends, produced pottery of too early a date. The compact spread of rubble, H, produced material (group 3) which Miss Thoms ascribes to the 13th or early 14th century, with the exception of one sherd which was only doubtfully ascribed to the late 14th. H is almost definitely associated with the building of the Pends, and could be expected to produce pottery of the late 14th or early 15th century. Again, the spread of clay and builders' debris, L, produced pottery of the mid to the late 13th century (group 2). This was particularly puzzling as group 2 was a tight, well-defined group and could not be explained as a rubbish survival. It seems preferable to modify the date range of the pottery than to suggest an earlier date for the Pends, which cannot be pushed back before the mid 14th century. Again the inconclusive nature of the pottery evidence must be stressed.

Period 3 was not securely represented in the archaeological record. The drainage trench N produced a coin of James IV or V. The pipe found in trench 1 certainly post-dated period 1 and may be as early as period 2 (if L is a period 1 deposit: see Note 2) but the excavator believed both it and M to be of 16th-17th century date.

#### NOTES

1 The existence of such a period 1 gatehouse demanded by the hanging passage provides a better explanation of this wall stub than an alternative suggestion — that the stub represents the remains of a turret stair corresponding to that on the N of the frater.

If a period 1 gatehouse was planned or existed, it could possibly have been designed to project only from the W wall of the frater and not to utilise part of the S wall as does the present Pends. The S wall of the frater continues, under the Pends vault, to the corner of the S and W walls in an unmodified form, which suggests that it was never meant to be part of a gate passage. Against this can be put the fact that the hanging passage connects with the front of the period 2 gatehouse, and therefore any period 1 gatehouse was designed to occupy the same area, and also to spring from the unmodified lower walls of the frater.

These problems could only be resolved by the demolition of the Pends.

2 The association of L with the Pends rests on its stratification above the foundations of the frater. The level of the ground surface associated with the frater was assumed to be that of the bottom of the lowest ashlar course, where the foundations were covered in a flat, well-finished layer of mortar and stone E, and the construction of the Pends was seen as the only occasion that could produce a spread of building waste above this. However, it is possible that L belongs to the period 1 building. If the period 1 ground surface occurred at the level of the top of the first order of the plinth (see above) L may represent back-fill of a foundation trench cut at this level. Unfortunately any other evidence in support of this had been destroyed by later disturbance. This context for the deposit would be closer to the date of the pottery, but there would still be a gap (late 13th century to post 1329) and it seems simpler and preferable to associate L, like H, with the building of the Pends.

# ACKNOWLEDGMENTS

I would like to pay tribute to the high standard of excavation and to the friendship of the late Tom Robertson. He will be greatly missed by his many friends and colleagues.

Grateful thanks are due to Mr C J Tabraham for all his help and encouragement both during the excavation and afterwards; to Miss L Thoms for preparing the pottery report and to Mr G Haggarty for his comments; to Mr C Hoy and Mr J H Lewis for their assistance throughout the excavation; to my wife for her help in producing this report; to Mrs R J Taylor and Mr T Borthwick for help in preparing the drawings for publication; and to Dunfermline Burgh Council whose help and co-operation greatly assisted the smooth running of the excavation. NMR.

#### THE FINDS

Unfortunately not all the material in the possession of Mr Robertson at the time of his death has been traced at the time of the preparation of this report. Included in this are the pipe and coin described below.

#### SMALL FINDS

A worn lead pipe from the W half of trench 1 approximately 7 m long, 0.08 m diameter and preserving a joint at its east end. Similar to a pipe recently discovered at Kelso Abbey (unpublished). A coin possibly of James IV or V from trench 1 feature N.

## The Pottery

A small quantity of fragmentary medieval pottery was recovered, the majority of it from postmedieval levels. A further quantity of sherds was discovered in the Abbey museum, preserved from the excavations of 1916, and also totally unstratified. Both groups were examined by Miss L Thoms, and subsequently by Mr G Haggarty. Vessels from the early 13th to the 16th century were represented. Only the stratified groups will be described in detail below, and none of these fragments seem significant enough to warrant illustration in the context of this report. It is hoped that any further excavation in the area will lead to a re-assessment of this material.

#### ANALYSIS OF THE POTTERY

by Miss L M Thoms

The small volume of pottery recovered from Dunfermline Abbey in 1975 is mainly in the form of small body sherds. There is little really useful analysis that can be done with such a small quantity of fragmentary material. The material consists mainly of jug sherds which are unglazed, though a proportion are glazed. Applied decoration, other than glaze, is rare in the group. The fabrics are mostly very hard, thin and fairly smooth. They compare effectively with material excavated over the past number of years in St Andrews (as yet unpublished). In the absence of any recognisable imported sherds it is reasonable to assume that all the material is the product of local kilns.

Group 1 Insecurely associated with wall A in trench 3. 13th-14th century.

One everted rounded jug rim in hard orange buff fabric.

External green glaze.

Group 2 From layer L in trench 1, (a very tight group).

Mid-late 13th century.

19 body sherds.

1 very tiny base sherd.

Group 3 From layer H in trench 2.

13th-early 14th century.

14 unglazed body sherds.

3 glazed body sherds.

1 body sherd with applied notched strip.

1 base sherd.

? late 14th century.

1 base sherd.

# Mr Haggarty adds the following note:

An attempt has been made to group the sherds into fabric types using a microscope with × 20 magnification. Three distinct fabrics were identified:

- (1) thick, smooth, dark grey reduced ware with external green glaze. This material in the form of jugs is ubiquitous in Scotland and is discussed elsewhere (Haggarty, 'the Pottery' in G Ewart 'Excavations at Stirling Castle 1977-8', Post Medieval Archaeol, 14 (1980), 36-46).
- (2) white, quartz-tempered ware with external green glaze. Similar material from field-walking in Fife is housed in the National Museum's Daniel Henderson collection.
  - (3) white to pale-grey hard fabric with a variety of inclusions up to 5 mm diameter.

Samples of these three fabric types will be deposited in the National Museum fabric reference collection.

The absence of published ceramic groups or kilns from this area makes it difficult to put any definite date on the material. Fabric 2, which is only represented by one sherd from trench 3, feature 9, is almost certainly the earliest, and may be early 13th century. Fabric 3, which is likely to be local, should date to the 14th or 15th century, when it may have been superseded by fabric 1, which starts to become common during the 15th century in Scotland but may not have completely ousted white wares until the 16th century or later.

#### 3 **INVESTIGATIONS IN THE NAVE. 1977**

by George Haggarty and Nicholas Reynolds

Early in 1977, the Superintendent of Works reported that a number of flagstones in the second bay from the E in the S aisle of the Abbey nave were sinking. A first investigation suggested that collapsing burials might be causing subsidence, although there was no record of recent burial in that part of the nave. The considerable importance for the early history of the Abbey of remains in that part of the church meant that in any case proper archaeological excavation had to be undertaken; and all the flagstones within the second bay were therefore taken up (fig 3).

Towards the E end of the area uncovered, a layer of rubble-packing some 20 cm thick was found (1), falling into a deeper depression at the centre of the E end (2). At a depth of 40 cm within this lay a lead coffin, originally entirely encased in wood, with a brass plate recording the name of the deceased:

> MARIA WELLWOOD OF **GARVOCK** DIED **1ST AUGUST 1847** AGED 70 YEARS

This coffin was still intact, though tilting downwards slightly to the N; and it soon became clear that it overlay a further lead coffin (3), and was resting on the collapsed iron mortsafe of that earlier burial. It looked very much as though all the movement that was likely to take place had already occurred, and, in view of the hazards of excavating lead coffins - especially one which had yet to collapse (or explode) - excavation at the E end was halted at this point. As the area immediately to N and S of these coffins was clearly disturbed by the rubble foundations of the two nave columns, it seemed most unlikely that any substantial earlier remains would survive. The presence of a third, somewhat lower-lying burial was indicated by the flat iron top-bar of a mort-safe (4).

The layer of rubble (1) which had evidently been put in on some previous occasion to level the floor did not extend fully to the W end of the area uncovered, and it seemed possible that the new disturbances noted here resulted from some different, and perhaps deeper, movement. A length of 2 m, somewhat under half the total length of the area, was therefore marked out to be taken lower. The floor here was supported on a mixture of dark loam with clay and rubble (12), containing a very large quantity of disturbed human bones (see Appendix). The overall depth down to the natural clay was 1.20 m. There were two barely-distinguishable changes in the vertical stratigraphy (a) and (b), apparently connected with the construction and then the disuse of a clay-packed sandstone wall (10), running E-W, which protruded for about 1 m into the area from the W, before being cut by a later grave. Below (b), the filling was considerably harder, incorporating much clay and stone.

To the S, the filling layers ran up against a pile of sandstone blocks, packed with heavy clay, which appeared to be part of the support for the column base set against the wall (8). To the N, the nave pier had apparently been recently repaired. The wall (10) had been dug into on its northern side, and large, very finely dressed sandstone blocks seem then to have been inserted as a fresh base for the pillar. There were slight traces of a foundation-trench dug for these into the natural clay, which could not be excavated for safety reasons. The gap between this column base and the wall (10) had been filled with a packing of sandstone rubble, sealed at the top with a filling of white aggregate. This might well indicate early Office of Works reconstruction at the Abbey.

In the course of this work, a further wall (11) had been disturbed. This had again been built of large sandstone blocks, quite finely tooled, but of a much yellower stone than the recent work. The construction of what was left of it was not of the first quality, but too little survived to give any clear impression of its status in the building. At its E end it appeared to have been disturbed by graves; at its W end the rebuilders of the pillar had shattered its stones and piled them back in as filling, thereafter laying roughly-coursed masonry on top to level up to the floor. Although so little was left of it, however, this early wall may not be without importance. Its short surviving length runs E-W between, but slightly to the S of the line of, the two nave piers. Its masonry is not unlike that which survives from the excavation of the earliest church on the site. It will be seen from the plan how close it is to the supposed S wall of the

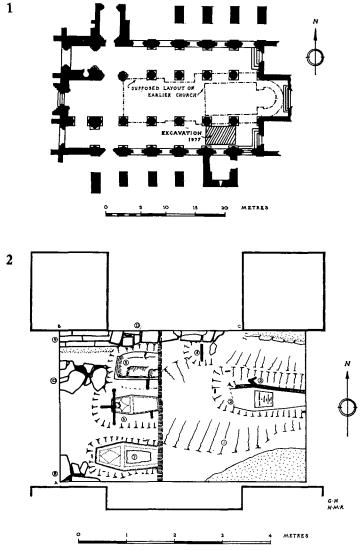


Fig 3 Dunfermline Abbey: excavations 1977

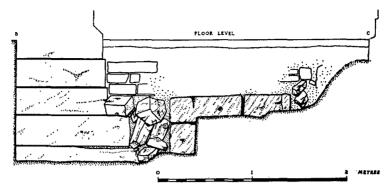


Fig 4 North Section. B-C

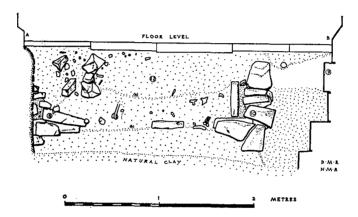


Fig 5 West section. A-B

early church, the outer face of which is in fact adduced from a single block of masonry on the 1917 plan (RCAMS 1933, fig 288, reproducing the Office of Works plan). It is possible, therefore, that this represents a firmer line for the outside wall of the church than that hitherto supposed; but only further excavation will verify this.

Into this jumble of disturbed remains at the W end of the excavated area there had been inserted at some stage three coffins. They were aligned E-W, and lay roughly side by side, though clearly not all buried at the same time. (5) was perhaps the earliest, a large lead coffin whose lid had long since fallen in, and its wood veneer almost completely decayed, though there was some trace of the brass studs which had decorated this. One portion of its iron mort-safe survived. (6) and (7) were elegantly shaped wooden coffins covered in leather and decorated with patterns of brass studs. (6) was a child's coffin. Despite the survival of a large part of the iron mort-safe at the head, the lid of the coffin had collapsed downwards, allowing part of the child's skull to protrude through. There was some trace here of an external wooden box or lid. Only the stumps of the mort-safe survived around (7), a full-size coffin, of which the centre of the lid had collapsed. (7) had been cut into the natural clay, at a depth from the floor of 1.27 m, while (5) and (6) rested just above the natural, at 1.07 m and 1.22 m respectively. There was no indication of date for these burials, though the style of the coffins was not dissimilar from the Wellwood one (2) of 1847, and so they may not be far removed from this in date. It is not clear, if this dating is

correct, why burial was continuing within the nave of the old Abbey after the construction of the present church.

Little appears to be known of the typology of late 18th- and early 19th-century coffin construction, though the lavish combination of lead, wood, and leather, and the elegance of the brass stud designs represented here, would seem to support the impression, given by the position of burjal in the south aisle of the old nave, that these were people of some standing in society. Mort-safes were probably an invention of the early 19th century, intended to thwart the activities of the 'Resurrectionists', body-snatchers who for personal gain collected freshly-deposited corpses to be sold for anatomical study (Hay 1957, 234-5). The designs varied considerably, but the examples shown here seem to follow a constant pattern, of uprights joined by horizontal cross-bars at the head, shoulders, and feet, linked by a longitudinal bar supported at either end of the coffin. This is closely paralleled by an example dug up at Oyne c 1913, and illustrated in the pages of these Proceedings (Ritchie 1921, 223-4, fig 4). These individual iron constructions, intended to be permanent, are slighter than the more normal heavily weighted mort-safes which appear to have been re-used once decay of the body in question was well-enough advanced. The Abbey floor may have been felt to be a sufficient additional deterrent, though it should be noted that in at least one example above (b), there is a suspicion of an additional wooden box surrounding the mort-safe. These may indeed be late examples of this form of protection. perhaps intended as much for show as anything. The Wellwood coffin was dated 1847, some fifteen years after the Act of Parliament passed in 1832, which was intended to provide for the proper supply of bodies required for medical study, and to make the trade of body-snatching unnecessary and unprofitable (Ritchie 1912, 326). The Oyne example, however, had been put in place within the memory of someone still alive when it was discovered in 1913, and so the tradition may have lingered on for some time. The combined strength of mort-safes and coffins was certainly sufficient to stand the weight put on them until they finally gave up the ghost in 1977.

The burials were left undisturbed; the excavated material was reburied, and the site levelled up with hard-core, in preparation for the replacement of the floor slabs.

# **ACKNOWLEDGMENTS**

We are grateful for the help of our assistant, Mr Colin Bowman, throughout this excavation, and of Mrs Diana Reynolds at one stage during the recording of the site; and we should like to thank our colleagues, Messrs Tabraham and Hynd, respectively Inspector of Ancient Monuments and Architect for this area, for their support.

Miss Lin Barnetson very kindly examined the bones for us, and her brief report is appended below.

#### NOTE ON THE HUMAN SKELETAL REMAINS

by Miss Lin Barnetson

The skeletal material recovered from the W end (layer 12) of the excavation in the S aisle of Dunfermline Abbey was examined briefly before reinterment.

As the bones were in a very fragmentary condition age and sex determinations were in most cases impossible. All the identifiable pieces are listed below and all belonged to adult individuals unless otherwise stated.

Scapula 13 fragments (of which one belonged to an individual less than 17 years of age)

Humerus 4 fairly complete

27 fragments

# 400 | PROCEEDINGS OF THE SOCIETY, 1981

Radius 9 fairly complete

9 fragments

Ulna 20 fragments

Innominate 26 fragments (of which the majority were probably male)

Femur 9 fairly complete (6 left, 3 right)

29 fragments (of which one belonged to an individual less than 17 years of age)

Tibia 4 complete (all left)

42 fragments

Fibula 3 fairly complete

Sacrum 2 fragments Vertebra A few pieces

Cranium Various fragments including 8 large pieces

Mandible 15 fragments with teeth in situ

1 fragment without teeth (all more than 25 years old except for one belonging to an individual c 15 years of age)

Of especial interest was the sign on two of the humeri of healed fractures. Several of the tibiae were rather robust with marked muscle ridges and therefore probably male.

At least three of the adult mandibles showed signs of pre-mortem loss of molar teeth with the sockets healed over.

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