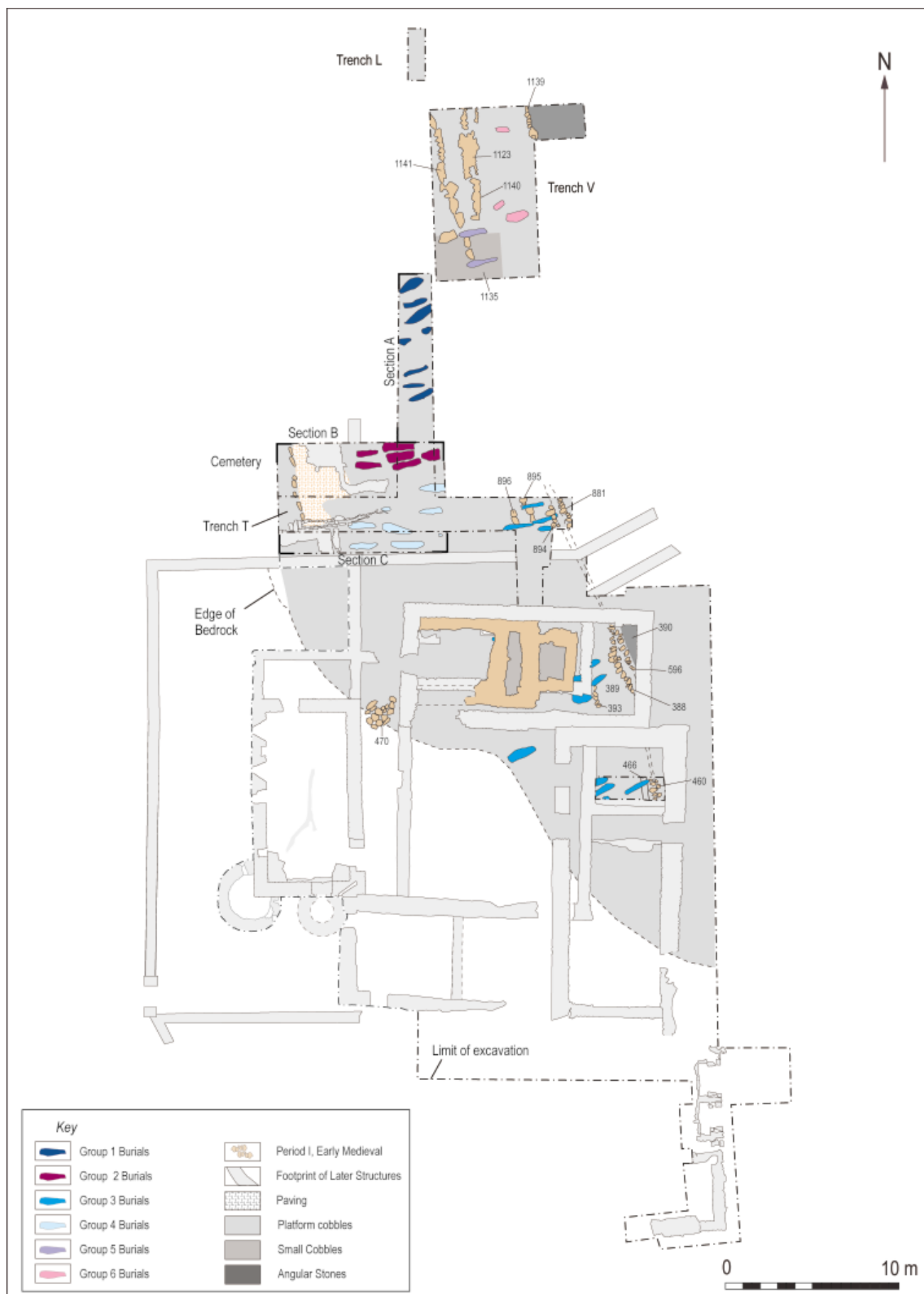




Illus 4.1 Overall Period I phase plan with revetments to raised beach, burial groups and the three churches.

4 The cemetery

4.1 Introduction (Illus 4.1 and 4.2)

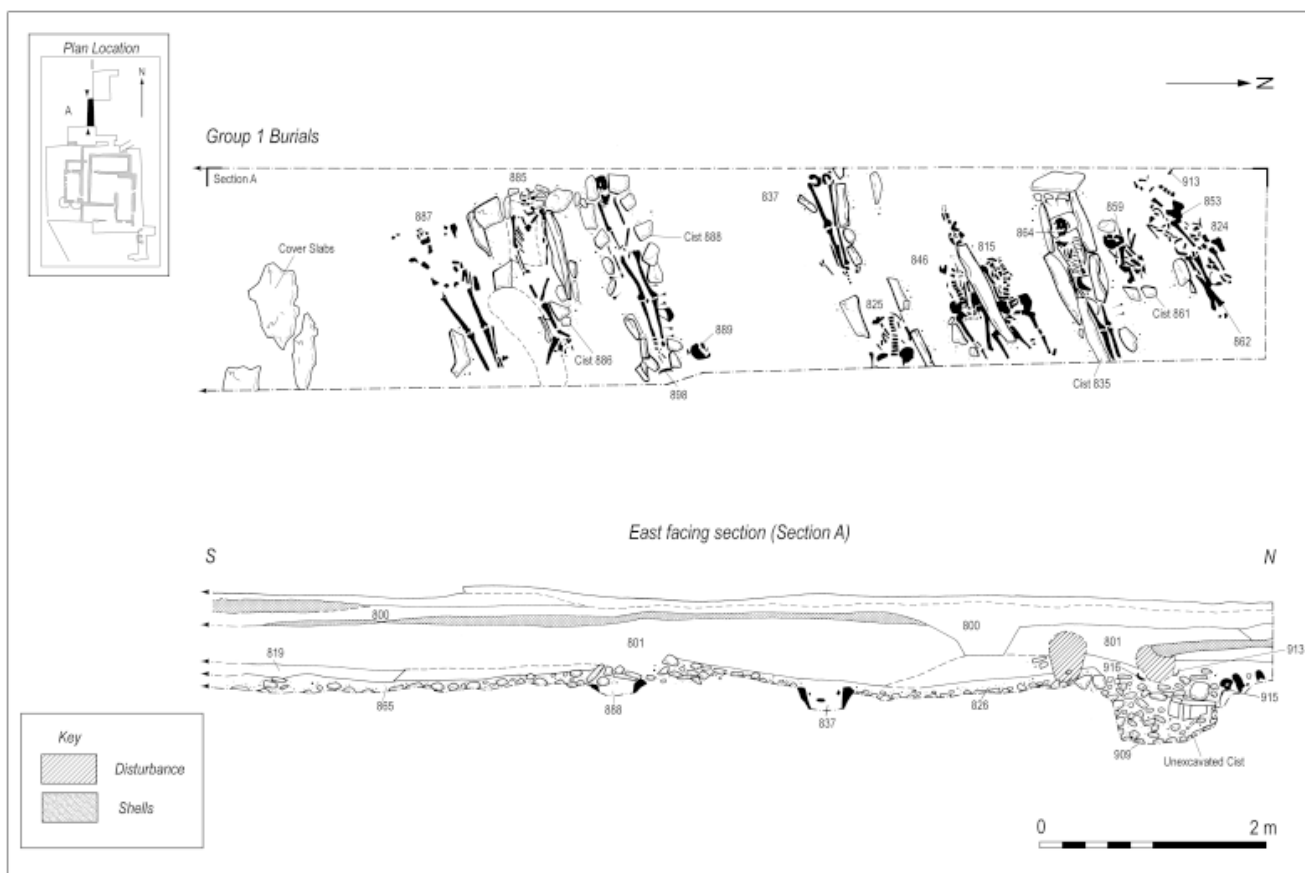
The raised-beach platform had been utilised as a cemetery for at least 600 years before the priory was established (Period I). The raised beach appears to have been transformed into something resembling a platform cairn from its earliest use, with the construction of a series of revetments. The platform was formed of loosely compacted, large, rounded beach stones, with small voids between them, and was of indeterminate depth. The platform was generally devoid of soil or sand, except for a little which had trickled down. Graves (Groups 1–3) were cut into this raised beach, the simple dug graves (Group 3) being almost impossible to detect from the surface due to the uniform nature of the stones, even when disturbed to create and fill a grave. The cisted graves (Groups 1 and 2) were easier to recognise as they were marked with side and cover slabs.

The cemetery continued in use during the occupation of the priory (Period II) and beyond, possibly as late as the mid-17th century (Period III, Phase 5), with its development linked directly to the various phases of

religious and secular occupation. The partial excavation of the cemetery recovered a total of 56 complete inhumations, along with several thousand disarticulated human bones which had been disturbed during the phases of building works.

4.2 Extent of the cemetery

The first hint of the cemetery appeared in the Bradford University geophysical survey as an oval-shaped anomaly, extending to the N of the upstanding W range for a distance of about 20m (not illustrated (Archaeological Management and Consultancy Services 1992)). The existence of the cemetery was confirmed in 1992 during trial trenching, when the partial remains of three extended inhumations (830, 831, 832) aligned roughly E–W, were revealed beneath 1.3m of post-medieval midden deposits and topsoil (see Group 3, Illus 4.1 and 4.6). Overall, burials were found up to 28m from the N wall of the church, indicating that the full extent of the cemetery was greater than the geophysical anomaly had



Illus 4.2 Group 1 burials, plan and section.

Table 4.1 *Long cists in Group 1.*

* indicates the presence of white quartz pebbles

cist	grave construction	age/sex/description	14c date cal AD 2σ
886	upright slabs	middle-aged adult male (885*)	400–790
887	partial upright slabs	mature adult male	
835	upright slabs, pillow stone for 864	1 adult, possible male (869*)	400–660
		2 middle-adult male (864)	
		3 disarticulated bones (848)	
		4 disarticulated bones (820*)	610–770

Table 4.2 *'Pebble-lined' cists.*

cist	grave construction	age/sex/description	14c date cal AD 2σ
888*	flat stones defining narrow grave	middle-aged male	
862	grave defined by small rounded stones	1 disarticulated bones (858)	
		2 disarticulated bones (855)	
		3 articulated legs and feet (853)	
		4 disarticulated bones (824*)	

suggested. A reasonable understanding of the extent of the cemetery was arrived at, including boundaries to the W and E, and burials were found to extend over an area 40m N–S by 13m E–W. The area tested by excavation was therefore about 20 per cent of the total area of the cemetery, and within this portion by no means all the burials were revealed or excavated. It should be stressed that the results of this partial investigation cannot be taken to be truly representative of the population within the cemetery, especially when segregation of the cemetery by age and sex appears to have taken place (*see* Chapter 6).

The W limit of the cemetery was defined by a paved and kerbed road surface (883, Illus 4.14), and no early burials were found beneath the road or beneath the W end of the later monastic church. To the S, the cemetery was delimited by outcropping bedrock, to the N of which burials (Group 3) were found which pre-dated the cloister and chapter house. The northern limit of burials was somewhere between Trenches V and L. A low bank of stones within Trench L (context 874) may have defined the N extent of the cemetery during the medieval period, as sherds of Yorkshire type ware, dated from the 12th to 14th century were found beneath it (Illus 4.1 and 5.26). There was also a slight slope away to the N in this area which may be regarded as the edge of the cemetery. On the seaward E side, the cemetery was defined by a series of revetment walls (Illus 4.1 and Chapter 5.2.1), designed to stop the beach stones from sliding down the steep slope. However, the presence of a skull (387), within the angular stones to the E of the revetment 596, may indicate that burials continued beyond it, perhaps to the very edge of the slope (Illus 4.7).

While the boundaries were clearly defined by a combination of topographic and man-made features, the extent of the cemetery was also defined horizontally by a layer of shell sand, which spread over the beach stones and into the cists, especially in the area just to the N of

the churches. The sand here (960, Illus 4.5) contained an Anglo-Saxon silver penny of Burgred, King of Mercia (852–74, Illus 10.5.1). The same layer of shell sand extended N (Illus 8.4, labelled 865), where it was found to contain an Edward I silver penny dated 1305–10 (Bateson, Chapter 8.3.2). However, this coin was found in the area of the first two burials to be uncovered by machine, and so there is a high probability that this coin was not in its primary depositional context.

Roadway and cemetery surface (Illus 4.1, 4.13 and 4.14)

The roughly laid road, built of flat stones, ran perpendicular to the E–W alignment of the Group 1 and Group 3 burials (883). The road was up to 3.5m wide and was exposed for a length of 5m, consisting of a single layer of worn slabs, each between 0.3m and 0.7m in length. The only datable find from this surface was a broken quern stone of later prehistoric or medieval date (*see* Mackie, Chapter 8.2.1). On the W side, the road was neatly kerbed with stones set on edge. These kerb stones were each between 0.2m and 0.6m in length. Whether the E side was also kerbed is unknown as this side had been much disturbed. A small test trench was excavated into the stone surface, and no evidence for burials was found. It would seem therefore that the road was a primary feature of the cemetery. This road headed S towards the W door of the Cluniac church, which was probably on the site of the doorway to the earlier churches.

There was no evidence for upright grave markers, although several of the cist burials, dated to the fifth to tenth centuries and even later, were marked on the surface by large, flat, sandstone slabs. The excavations revealed that multiple burials were made in the cists, and so access was required from the surface. The proximity of the majority of the Group 1, 2 and 3 burials to the contemporary surface, and the likelihood that the

location of these graves was somehow marked on the surface, probably contributed to these areas having been avoided by later burials. The deepest burial exposed was found in a cist c0.45m below the platform surface (1033, Illus 4.12 and 4.13), and was only detected because of the presence of a massive cover stone (892) marking its position on the surface (*see* Illus 4.11).

4.3 Burial type

A variety of burial types were used within the cemetery. Following O'Brien's suggested terminology (in Blair and Pyrah 1996, 163), these can be described as long-cist graves, stone or pebble-lined graves, and unprotected dug graves. The term 'long cist' has been used here (following the Hallow Hill terminology) for long cists with or without covers (Proudfoot 1996, 400), thus merging O'Brien's stone-lined graves and cist grave categories. One grave (1046) utilised long, blocky cover stones (850) rather than flat cover slabs. It is believed that these covers were generally flush with the contemporary ground surface. Dug graves were those with no stone side slabs, some of which may once have contained coffins. Proudfoot also identified 'boulder-edged graves' at Hallow Hill where small boulders lined the grave rather than sandstone slabs. On the May these have been termed 'pebble-lined' graves because of the small size of the stones involved. These pebbles have clearly been placed edge-on to the grave and are not simply dug graves.

Twenty-one long cists were excavated and these contained at least 48 individuals (Groups 1 and 2, the remaining burials being from uncisted graves). There was considerable variation in the quality of the cists constructed, ranging from the well-constructed cist 1034 for burial 1033 with its massive cover slab (Illus 4.11 and 4.12), to several burials which appeared to have had only a single, large, side slab surviving (872, Illus 4.13). These burials were not accompanied by grave goods. However, white quartz pebbles were included within many of the burial fills, among the deposits of shell sand and periwinkles. The significance of the white quartz pebbles is discussed below (Chapter 10.2.1).

An attempt was made to divide the burials into groups based on their chronology, orientation, location and burial method (Illus 4.1), but as can be seen in Illus 3.7, there is considerable chronological overlap between Groups 2 and 5.

4.3.1 Group 1: burials in the northern arm of the cemetery

At least 18 burials were exposed within 9 long cists and two pebble-lined cists (Illus 4.1 and 4.2) in the 2m-wide N arm of trench T; here the cists survived only as a few upright slabs. This group was carefully laid out in two parallel rows, which respected each other with no overlap. The cists tended to have only side slabs, which

were often shared with neighbouring cists. A few cover slabs were noted, but there were no base slabs, although one had a pillow slab. These burials were orientated WSW–ENE, with an alignment varying between 20 degrees and 37 degrees from magnetic E–W, which is at right angles to the revetment edge. Three burials within this group produced the earliest radiocarbon dates from the site, dated to between the fifth and seventh century. There were no vertical grave markers, and no evidence that the burials had been sealed by stone cairns. Sandstone slabs observed in this area were thought to seal more burials, but were left unexcavated.

4.3.2 Group 2: cists in the north of the cemetery

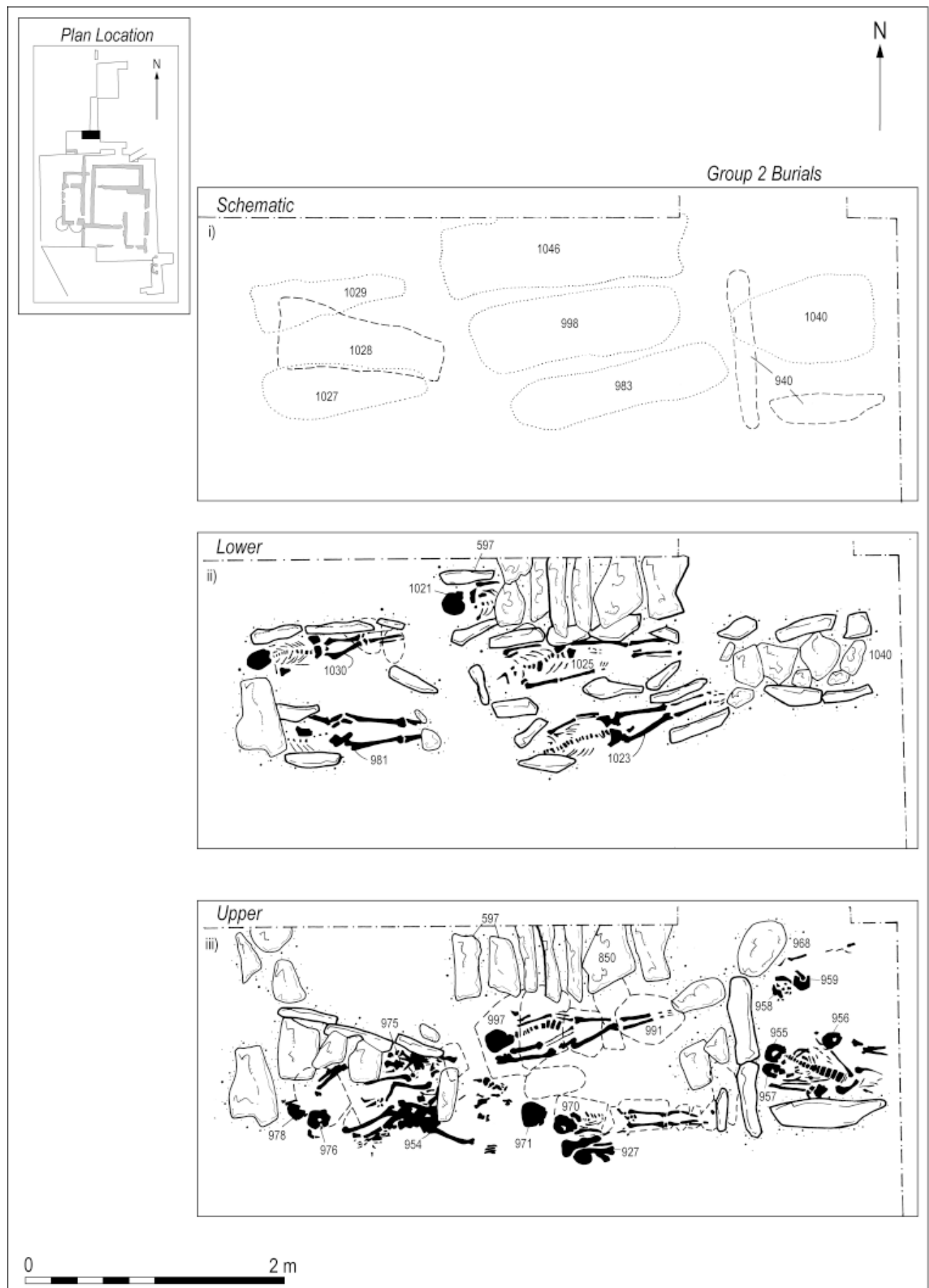
A particularly dense concentration of cists was recorded to the S of Group 1 (Illus 4.1 and 4.3). Eight substantially constructed cists were revealed, laid in three parallel rows N–S, and in lines, head to toe, roughly E–W (Illus 4.3.i). The massive blocks of cist 940 had been constructed in the NE corner of the area over cist 1040 and, further W, a cist (1028) had been constructed over cists 1029 and 1027. Most of these cists contained multiple burials, which ranged in orientation from true E–W to 33 degrees from E–W. Two burials produced radiocarbon dates between the eighth and tenth century. They appeared to form a coherent, planned group, in some cases with adjoining graves sharing side and end slabs.

Stratigraphical relationship of cists

Burial 997 (a possible female) in cist 998 had suffered from a childhood infection and had a severe infection (osteomyelitis of the tibia) which had spread through the body and finally caused death. The complete skeleton of a mouse was found by the chin of this individual.

Cist 983 is the only example where the radiocarbon evidence suggests that an earlier burial lay over a later one. However, this could be accounted for by the imprecision of the dating technique as the dates overlap at the 2 σ uncertainty level.

Further uncisted burials lay over the approximate location of cist 983. The burial of a young adult (971) lay immediately beneath the remains of a child of about seven years old (970) (*see* Illus 6.3, iii). The individual (971) was found to have suffered from a childhood infection, iron deficiency anaemia and had congenital abnormalities (*see* Battley and Roberts, Chapter 6). The Group 1 and Group 2 cist burials were sealed with white shell sand, rich in periwinkles. Both the edible and the non-edible flat and rough periwinkles were present in the sand, and these species are present today in the beach at Kirk Haven. This suggests that the graves were sealed with this locally available sand, probably because of the lack of soil on the island, and perhaps also as a ritual and actual purifier, bearing in mind the proximity of most burials to the surface.



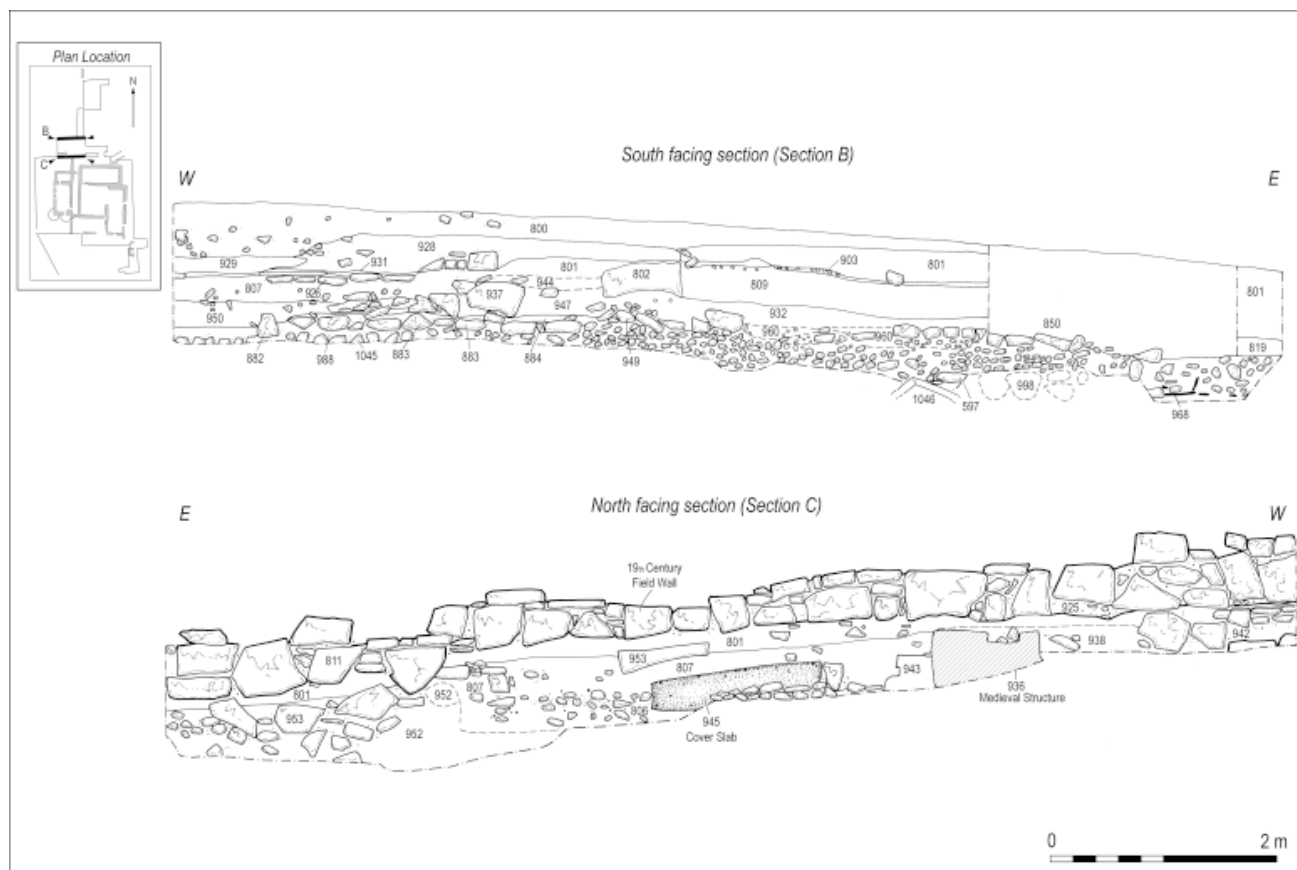
Illus 4.3 Group 2 burials.



Illus 4.4 Group 2 cist burials: neat rows with shared side slabs and cover slabs. (© Fife Council)

Table 4.3 *Group 2 burials.*

cist	grave construction	age/sex/description	14c date cal AD 2σ
1040	five upright slabs and base slabs	1 middle-aged adult male (1039*)	
		2 disarticulated adult and neonates (1035, 1036*, 1037, 1039*)	
1027	side slabs around head area, no basal slabs, sealed by a large slab	1 mature adult female, prone position (981*)	
		2 young adult male (980)	
		3 articulated burial and disarticulated adult and child/infant bones (954, 975, 978)	
1029	side slabs	13–15-year-old individual (1030)	
1028	above 1029, side slabs	1 partially articulated bones (1026*)	
		2 adult female (993)	
		3 adult male lying on left side (987)	
998	upright slabs, and covering slabs	1 young adult male (1025*)	
		2 possible female 14–17 years (997)	
1046	upright slabs and lintel slabs (597) and stone blocks (850)	mature male (1021)	
983	side slabs and foot slabs	1 middle-aged adult, possibly female (1023*)	680–990
		2 disarticulated young adult male (1022)	660–890
		3 young adult, possibly male (995)	
		4 young adult female (985*)	
940	large side slabs	1 mature male (967*), young adult (957) and disarticulated bones which include infant <5 years old (956, 958, 968, 969)	
		2 middle-aged adult, possibly male (955) and one mature male (959)	



Illus 4.5 Cemetery south-and north-facing sections.

Table 4.4 *Dug graves in the cemetery.*

cist	grave construction	age/sex/description	14c date cal AD 2σ
832	dug	young adult male	430–853
833	dug	adult male	
830	dug	middle-aged male	
831	dug	mature adult male	890–1040

Table 4.5 *Dug graves beneath the church.*

cist	grave construction	age/sex/description	14c date cal AD 2σ
442	dug	skull and upper vertebrae of possible prone burial	680–1010
385	dug	adult male	
386	dug	young adult male	899–1220
378	dug	partially articulated torso, upper legs and some disarticulated bones	
379	dug	upper leg bones	
384	dug	feet	

Table 4.6 *Dug graves beneath the chapter house and cloister.*

* indicates the presence of white quartz pebbles

cist	grave construction	age/sex/description	14c date cal AD 2σ
376	?	feet only	
431*	dug	two female adults	
433*	dug	disarticulated bones	
440	dug	possible adult male	
443	dug	disarticulated bones of 3 adults	
444	dug	middle-aged adult male	650–880
453	dug	articulated left hand and thigh	
1211	dug	young adult male	970–1220

4.3.3 Group 3: dispersed, uncisted graves

This was a dispersed group of uncisted burials which were orientated SW/NE, similar to the Group 1 burials, and were radiocarbon dated to between the seventh and twelfth century (Illus 4.1). The Group 3 burials possess the widest date range for all of the groups and were found in various locations within the cemetery; at the E end of the cemetery and beneath the foundations of the church, the chapter house and in the cloister. The Group 3 burials had been dug through the loosely compacted stones of the raised beach.

Burials in the cemetery (Illus 4.6)

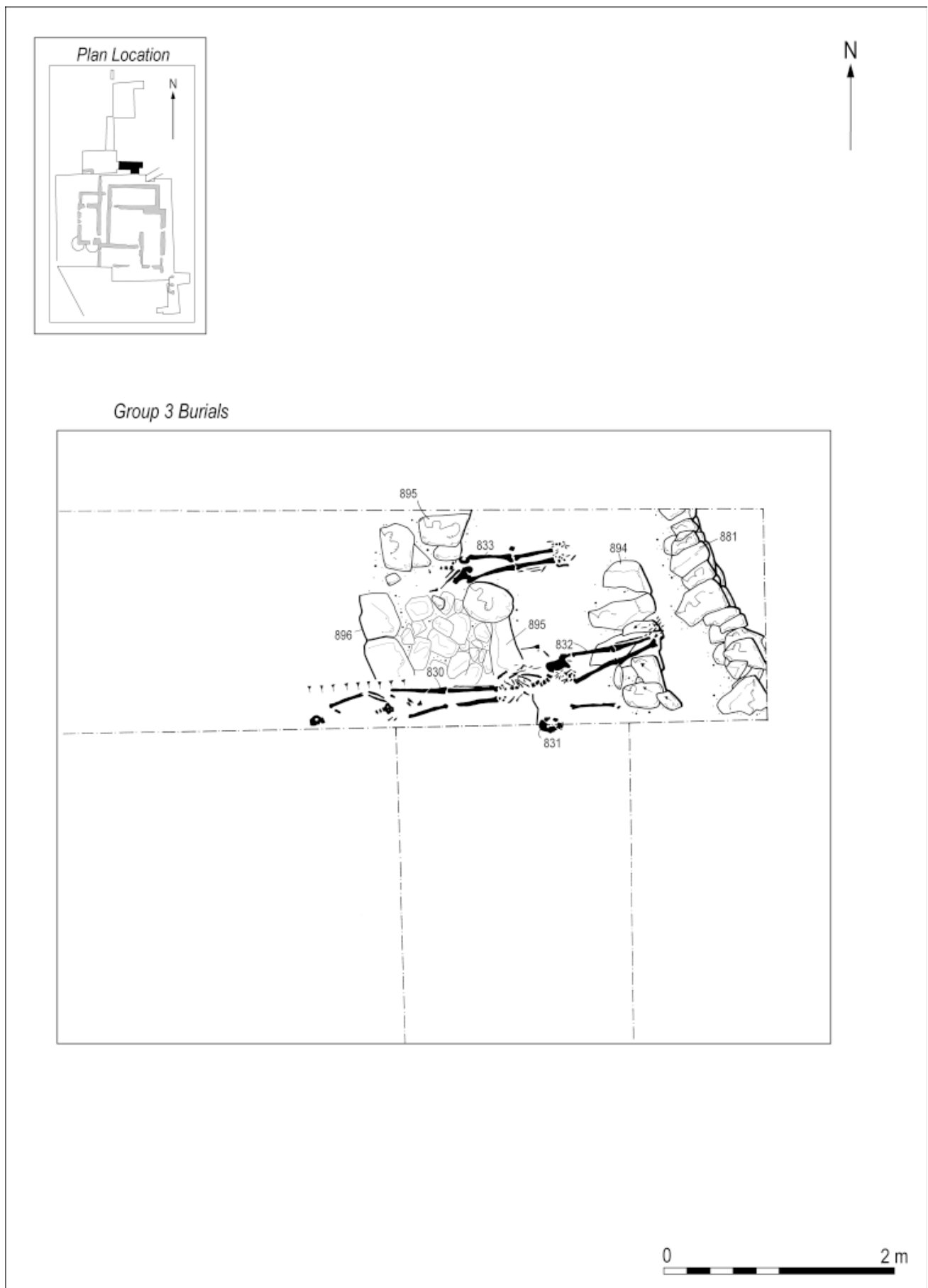
Four burials were investigated in the E arm of the cemetery trench. This group of possibly all-male burials was found 12m SE of Group 1. The two deepest burials (832 and 833) lay parallel with each other at a depth below the surface of about 0.5m, with two overlying burials (830 and then 831) cut into the stones which backfilled the grave for 832. These burials overlay the two earliest revetment walls of the platform (895 and 894).

Beneath the church (Illus 4.7 and 4.8)

A fragmentary skull (442) was found beneath the E wall of the first phase church wall (412). Burials 385 and 386, two articulated skeletons, were found c0.45m beneath the foundations of the third phase of the church and overlying the inner revetment wall (393). Above these were partially articulated skeletons (378, 379 and 384) which were sealed by the foundations of the third stone church (190). Other disturbed human remains seen beneath the church included a charnel pit (419) and a skull (450), along with two articulated burials (358) sealed beneath the foundations of the S wall of the Cluniac church (113). These were not fully excavated.

Beneath the chapter house and cloister (Illus 4.9 and 4.10)

The S half of the area beneath the chapter house floor was excavated and several burials were found within, and close to the surface of, the platform cairn. A few very small charred fragments of woven wool were found



Illus 4.6 Group 3 burials, E trench in cemetery.



Illus 4.7 Group 3 burials, E end of church.



Illus 4.8 Group 3 burials beneath the church.
(© Fife Council)

among the rounded stones and loose soil (418) which sealed the burial 444, although the bones themselves were not charred (101.5 SF 57; see Gabra-Sanders, Chapter 8.3.3). This skeleton lay over the possible revetment 466, while its lower leg bones were sealed by the revetment 460. Just S of this was a group of disarticulated bones (443), which had presumably been disturbed by the construction of either the revetment 460 or the E range.

Two further burials were found to the W: 431, which contained bones from two female adults, and 440, a possible adult male. Disarticulated bones (433, not illustrated) were found above 440. Some stones lay between these two burials, but they could not be described as a cist. To the S, beneath the chapter house wall (316), was a partially exposed burial (435), which consisted of an articulated left hand and thigh.

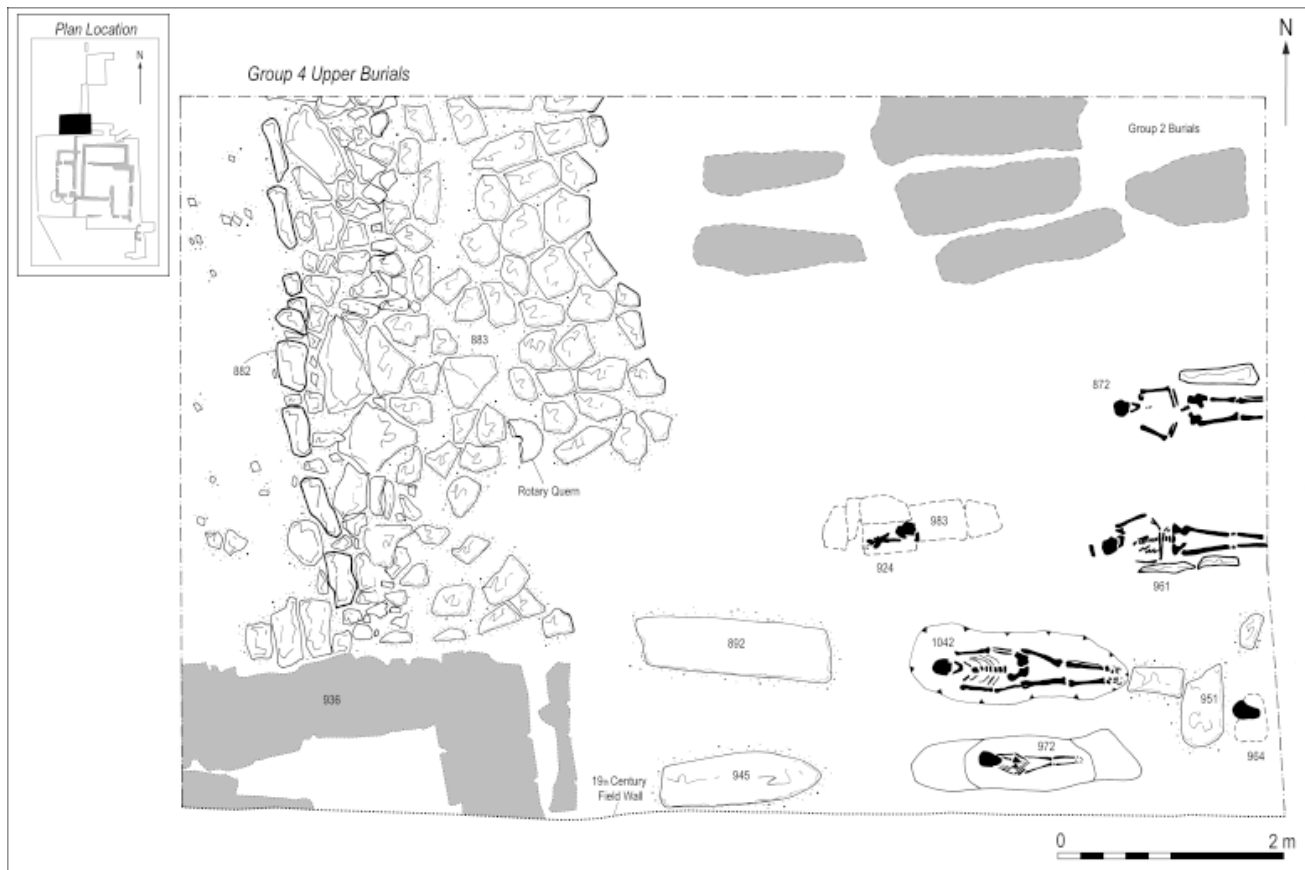
Two burials (1211 and 376) were found in what later became the cloister. Burial 1211 was accompanied by a number of small red and blue naturally coloured stones within the grave fill and within the mouth of the skeleton. This feature was unique to this burial, as usually only white quartz pebbles were found with the burials. The skeleton was fairly complete except for the upper left side which had been disturbed by the cutting of a charnel pit (496). Just the two feet (376) remained of a burial that had been disturbed by the drain 373.



Illus 4.9 Group 3 burials beneath the cloister and chapter house.



Illus 4.10 Group 3 burials beneath chapter house: burial 444 in foreground found in association with charred cloth.
(© Fife Council)



Illus 4.11 Group 4 upper burials and roadway.

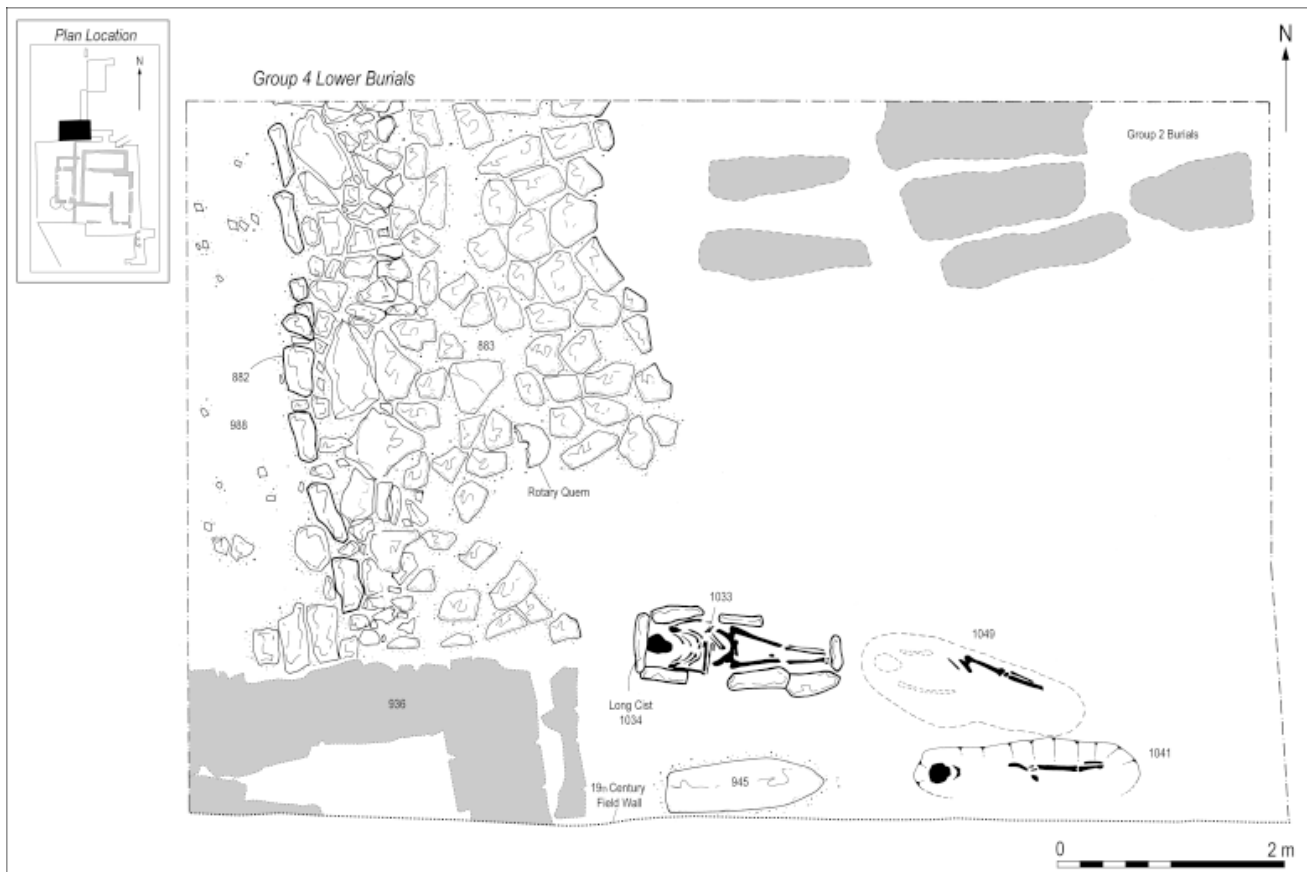


Illus 4.12 Burial 1033 from the east, deeply buried under large stone marker.

4.3.4 Group 4 (Illus 4.11–4.14)

A group of burials was discovered to the N of the church. These were quite distinct from the Group 2 burials to the N of them and from the Group 3 burials to the S, in that they were laid out in rows and comprised uncisted, partially cisted and cisted burials. The two westernmost burial plots were covered by massive recumbent slabs (892, 945), of which only 892 was investigated and found to contain one individual (1033) within a deeply buried cist. Most of the area between the cemetery and the church was taken up with a post-medieval path and was not excavated. It is therefore not known whether any burials existed in this group to the S. The remaining Group 4 graves were all shallow. The lack of overlap between these graves suggests that they were marked at ground level, and that care was taken not to disturb earlier burials. Two plots, however, were each used at least twice.

Cist 1034, with skeleton 1033 of a middle-aged woman, was one of the most substantial and carefully constructed cist found on the site. This was a relatively deep grave that was cut 0.5m into the beach stones of the platform, lined with five upright sandstone slabs and with a single slab at either end, but without base slabs. There was a large white quartz pebble at her right shoulder. A flint (101.5 SF 41) and a clench nail (101.5 SF 41) were also found within the fill of the cist (context 1043), which consisted of a mid-brown loam and small



Illus 4.13 Group 4 lower burials.



Illus 4.14 Paved road 883 marking the west boundary of the cemetery, heading towards the west end of the churches, overlain by the two large grave-cover slabs, graves 1033 and 945. (© Fife Council)

Table 4.7 *Group 4 burials.*

cist	grave construction	age/sex/description	14c date cal AD 2σ
872	single upright slab and basal slab	mature adult male	
961	three upright slabs	young adult female	
964	two cover slabs	skull	
972	dug	8 year old child	
1034	substantial cist and covering slab	middle-aged adult woman (1033)	1047–1280
1041	dug	adult not lifted	
1042	dug	middle-aged male	970–1250
1049	dug	adult	

Table 4.8 *Group 5 burials.*

cist	grave construction	age/sex/description	14c date cal AD 2σ
1137	dug	robust middle adult male	1160–1290
1138	dug	young adult female	

Table 4.9 *Group 6 burials.*

cist	grave construction	age/sex/description	14c date cal AD 2σ
1116	dug	adult	
1120*	dug	middle aged adult of indiscernible sex	1430–1650

rounded pebbles. This cist was sealed by 0.3m of similar stones and soil. No cut for this cist was visible through the platform material, and it was only the existence of a massive stone marker resting on the surface of the platform (892) that indicated its location. This undressed, undecorated slab was 1.7m long and 0.3m high with a slightly curving ridge profile and fairly rounded edges. It took the concerted efforts of four archaeologists to move this slab to one side to allow investigation of the grave beneath. Lying parallel to cist 1034, against the edge of the excavation trench, was a similar massive stone slab (945) that probably marked another burial. This was left unexcavated as it lay beneath the section edge. This natural slab was 1.5m long and 0.3m high.

Two dug graves were found 2.6m E of the slab-marked graves, cut through a layer of orange ash (952) which was probably the result of an intense fire. An adult (1041,) was partially exposed and not lifted. Above this adult was a child (972, Illus 4.13), who had suffered from a severe infection resulting in a hunchback where the upper spine had become fused; an associated infection was probably the cause of death. To the N of these, a burial, that was only partially exposed and not lifted (1049, Illus 4.13), lay beneath another burial (1042, Illus 4.11). The latter was found with a lead weight beside the left shoulder (101.5 SF59, *see* Cox, Chapter 8.3.2, No 47), and a large quartz pebble beside the right shoulder.

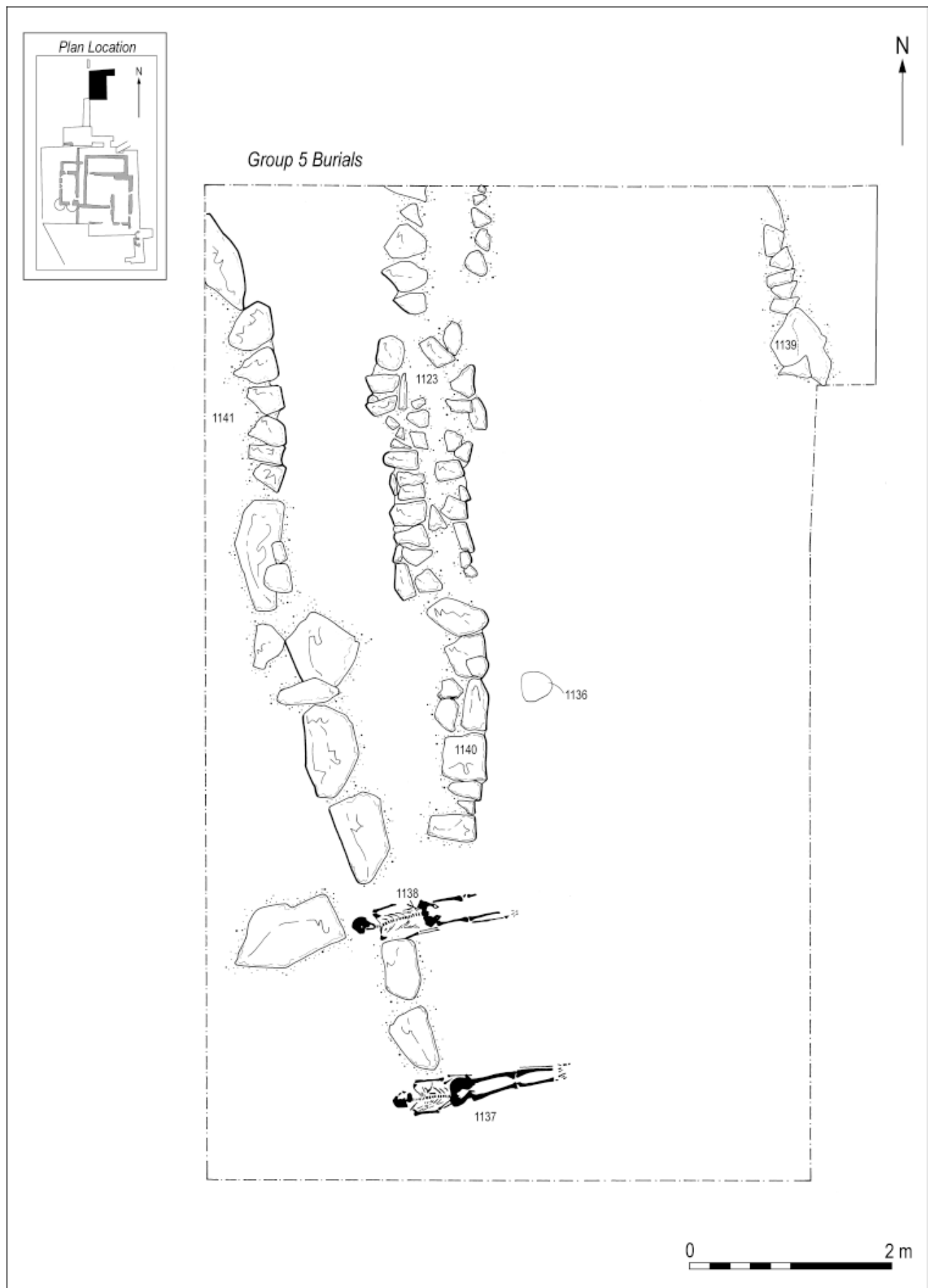
4.3.5 Group 5

This group consisted of two shallow, uncisted dug graves within Trench V, in the most northerly part of the cemetery (Illus 4.15). They were found 1.8m apart, lying parallel and aligned WSW–ENE. Burial 1137 had widespread degenerative joint disease, as well as a condition known as ‘weaver’s bottom’ (*see* Battley and Roberts, Chapter 6). The other individual (1138) had a broken nose, and had suffered from a severe chest infection. These burials might have been cut into the line of an early boundary wall (1141).

4.3.6 Group 6

Burials 1116 and 1120

This group consisted of two partially disturbed burials, aligned E–W near the E side of Trench V (Illus 4.1 and 4.16). These burials were uncisted and the lower half of each body was missing. It is possible that this damage could be related to the construction of the revetment 1139, although it is thought that the revetment was an earlier feature. Burial 1120 was the latest dated burial on the site. Groups 5 and 6 are probably a continuation of the same tradition of burial, but have been separated here on chronological grounds.



Illus 4.15 Group 5 burials, Trench V.



Illus 4.16 Group 6 burials, Trench V.

4.3.7 Burials of disarticulated bone

A number of pits containing carefully placed disarticulated bones were found which probably represent reburial of bones disturbed during construction of the priory and post-medieval structures. Disarticulated bone was also found in 90 contexts associated with construction work, as well as in the upper layers of the cemetery, which shows that care was not always taken to rebury disturbed human bones.

In Trench V, disarticulated bones were buried in five pits, four of which are illustrated (1115, 1117, 1124 and 1125, Illus 4.16). In the cemetery there was an unusual burial beneath six sandstone slabs (893), which were originally thought to mark an undisturbed burial. When lifted, a group of bones consisting of a skull, long bones and a pelvis were found along with two nails and two sherds of pottery (one Yorkshire Type Ware and one Scottish White Gritty Ware). The bones were lying in a shallow pit in the rounded stones of the platform, with no visible grave cut. This area was not excavated further, although considering the depth of cist 1033 beneath the massive slab, it is possible that a body lay deeply buried here beneath the slabs. The disarticulated bones may represent the careful reburial of human remains disturbed during the digging of a nearby grave. A carefully placed group of bones (927) was found just beneath the surface of the burials 970 and 971 (*see* Illus 4.3.iii). It consisted of numerous fragments, which comprised adult long bones and a child's skull. The skull fragments had been carefully placed one over the other with the front of the skull facing down. A charnel pit (496) within the cloister garth also contained a large quantity of human bone (Illus 4.9).

4.4 Radiocarbon dating of burials (Illus 4.17)

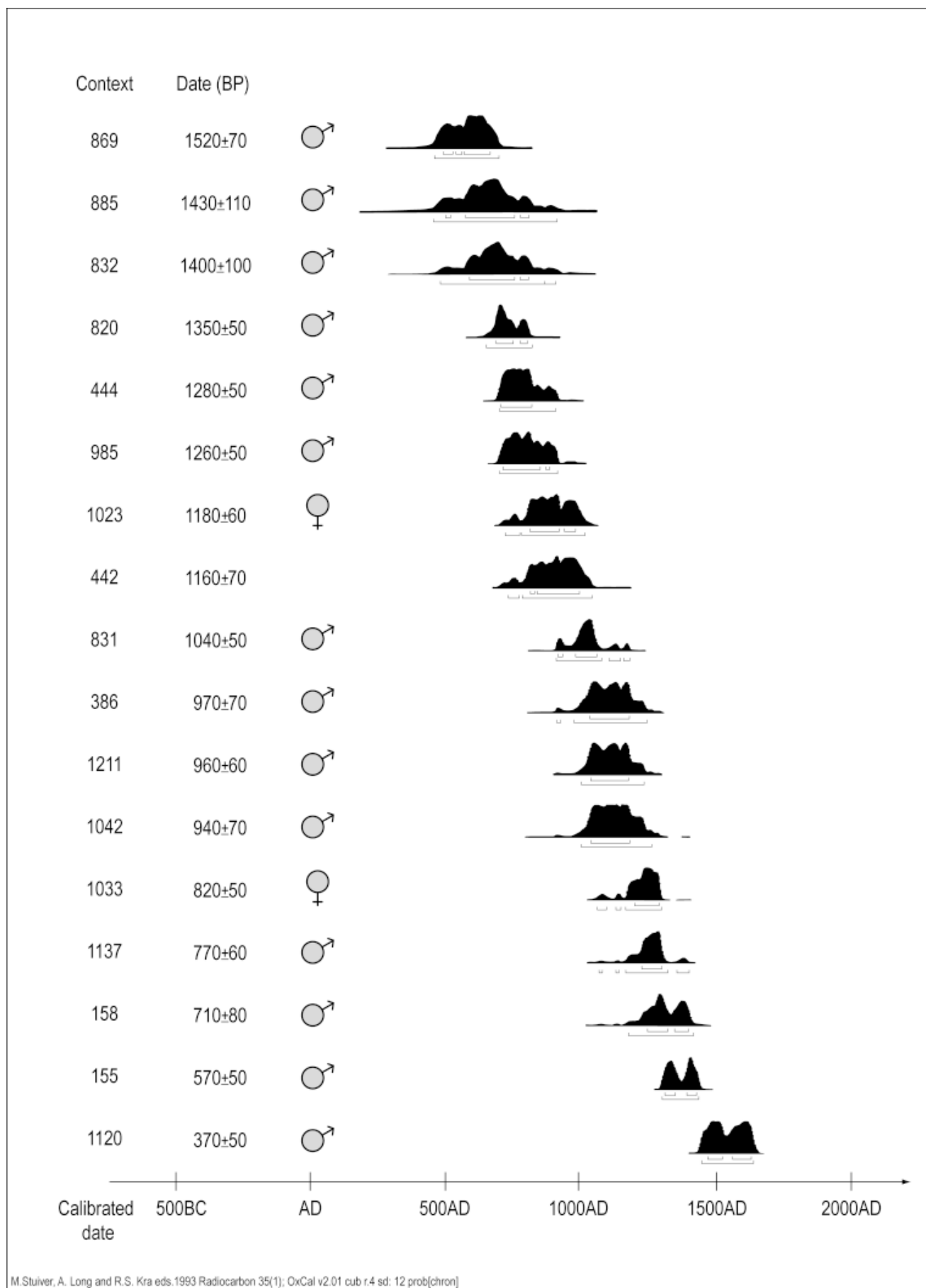
Seventeen samples of human bone from the excavations were sent for radiocarbon dating to the Scottish Universities Research and Reactor Centre, East Kilbride. The sampling strategy was designed to provide chronological information with regard to the origins of the cemetery and its spatial development. The different burial types and orientations suggested that the cemetery was in use over a long period of time, and so a number of dates were required to test this theory. In the case of multiple burials from within a single cist, dates from both the earliest and the latest burial were submitted from two examples (983 and 835) in order to identify the length of use of individual cists.

The ^{14}C ages are quoted in conventional years BP (before AD 1950). The errors are expressed at the one sigma level of confidence. The calibrated age ranges are determined from the University of Washington, Quaternary Isotope Laboratory, Radiocarbon Dating Program, 1987. The 20-year atmospheric calibration curve is used throughout and the calendar age ranges, obtained from the intercepts (Method A), are expressed at both the one and two sigma levels of confidence. In the case of marine shell samples derived from around the UK coastline, an apparent age (reservoir effect) of 405 ± 40 years (Harkness 1983) is subtracted from the conventional ^{14}C age prior to calibration using the 20-year atmospheric curve.

The resulting range of radiocarbon dates indicated that the cemetery was continuously in use, from the fifth to the seventh century to the 15th to the 17th century, although latterly perhaps not so frequently. Radiocarbon dating is not precise enough, however,

Table 4.10 Radiocarbon dates of burials (*G Cook, Scottish Universities Research and Reactor Centre, East Kilbride*)
Note also the radiocarbon dates from the peat samples in Chapter 7 (Table 7.20).

sample number	context	date	$\delta^{13}\text{C}$ (‰)	cal AD 1 σ	cal BP 1 σ	cal AD 2 σ	cal BP 2 σ
GU-4211	832	1400 $\pm$ 100	-19.4	560–680	1390–1270	430–853	1520–1097
GU-4212	885	1430 $\pm$ 110	-19.6	540–670	1410–1280	400–790	1550–1160
GU-4213	820	1350 $\pm$ 50	-20.0	647–682	1303–1268	610–770	1340–1180
GU-4214	869	1520 $\pm$ 70	-17.2	434–610	1516–1340	400–660	1550–1290
GU-4215	831	1040 $\pm$ 50	-18.1	968–1021	982–929	890–1040	1060–910
GU-4962	155	570 $\pm$ 50	-20.1	1305–1414	645–536	1280–1430	670–520
GU-4963	158	710 $\pm$ 80	-19.9	1252–1375	698–575	1170–1400	780–550
GU-4964	386	970 $\pm$ 70	-20.3	999–1160	95–790	899–1220	105–730
GU-4965	442	1160 $\pm$ 70	-21.4	780–969	1170–981	680–1010	1270–940
GU-4966	444	1280 $\pm$ 50	-21.5	669–782	128–1168	650–880	1300–1070
GU-4967	985	1260 $\pm$ 50	-22.8	677–790	1273–1160	660–890	1290–1060
GU-4968	1023	1180 $\pm$ 60	-22.0	776–940	1174–1010	680–990	1270–960
GU-4969	1033	820 $\pm$ 50	-21.7	1169–1263	78–687	1047–1280	903–670
GU-4970	1042	940 $\pm$ 70	-20.8	1015–1169	935–781	970–1250	980–700
GU-4971	1120	370 $\pm$ 50	-19.7	1448–1630	502–320	1430–1650	520–300
GU-4972	1137	770 $\pm$ 60	-19.7	122–1277	729–673	1160–1290	790–660
GU-4973	1211	960 $\pm$ 60	-19.0	1012–1160	938–790	970–1220	980–730



Illus 4.17 Radiocarbon dates.

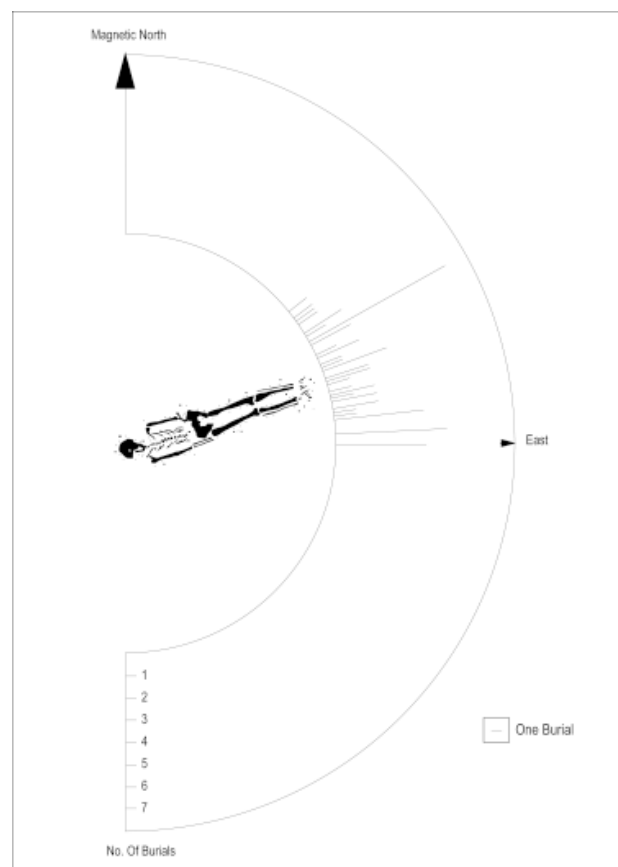
to detect short periods of inactivity, of perhaps less than a century, when the cemetery may not have been in use.

All the dated long-cist burials were found to date to between the fifth and tenth century (2 σ), except for the 'special' cist burial 1033 (Group 4) which was dated to the mid-11th/late 13th century. This concurs with the span of the fifth to the eighth or ninth century, as proposed by Henshall, for long-cist cemeteries, with some sporadic medieval use (1956, 269). This broad date range has been supported by more recent discoveries where radiocarbon dating has been possible, although Dalland suggests an eighth-century date as the upper limit (Dalland 1993, 343). The Thornybank, East Lothian, long-cist cemetery has returned dates of the third to ninth centuries (2 σ), (Rees 2002, 344) with a particular concentration between 450 and 550 (*ibid*, 349) which would suggest that Thornybank was a particularly early cemetery of this type. However, the earliest long-cist burial on the May is no earlier than the presently accepted inception date for long-cist burials of the early fifth century.

A period of transition, between the 10th and 12th century, is suggested when both long cists and dug graves appear to have been used. This contrasts with the dating of other long-cist cemeteries that were only in use for a finite period. Dalland has examined the likely duration of some of the excavated sites from their radiocarbon dates and found that Hallow Hill, St Andrews, Fife, lasted for about 400 years; Catstane, Midlothian, for 175 years; and Four Winds, Longniddry, East Lothian, for only about 170 years (Dalland 1992, 204). From the radiocarbon dating of Hallow Hill, Proudfoot postulated that the primary cist burials here, complete with antique Roman artefacts, dated from the fifth century. A concentration of burials was observed in the seventh century, with the cemetery going out of use in the ninth century (Proudfoot 1998, 65). Without the benefit of radiocarbon dates, Henshall suggested that Parkburn, Midlothian, was probably in use for only one or two centuries between the early sixth century and the early eighth century (Henshall 1956, 271). In contrast, St Mary's Kirkheugh, St Andrews, is thought to have been in use for 500 years (Close-Brooks 1984, 96). At Whithorn, where the cemetery continued in use for a period of more than 1000 years, there was a transition between lintel graves and log-coffin burials in the early eighth century (Hill 1997, 70).

4.5 Cemetery layout and orientation

The Group 1 cist burials (Illus 4.2) were neatly laid out in at least two parallel rows, with no overlapping, while the Group 2 cist burials (Illus 4.3) were densely packed in lines and rows with some overlapping of cists. The Group 3 dug graves (Illus 4.6, 4.7 and 4.9) were less extensively revealed, but appeared to have been laid out in lines, also with some overlapping. Within the excavated area of the cemetery it is not possible to



Illus 4.19 Diagram of grave orientations.

identify a clear focus. The Group 2 cists were densely packed to the S of two slightly different graves, a lintel grave and a deep cist with basal slabs, but without excavation to the N of these cists, it is not possible to say that either of these was the focus.

The burials in the cemetery were all orientated with their heads roughly to the W (Illus 4.18). The orientation does, however, vary within a range of 47 degrees. The Group 1 and Group 3 burials were generally aligned SW–NE, while the Group 2 burials were oriented more E–W. Group 1 had a particularly consistent alignment clustered around 30 degrees from magnetic E–W. The E–W orientation of the graves is seen as a Christian rite connected with the belief in bodily resurrection. When rising from the grave on the Day of Judgement, the body of the deceased is brought to life to face Christ appearing in the E (Daniell 1997, 161; Rahtz 1978, 3–4).

This variation in orientation may have resulted from one or more changes in focus for the cemetery, related to a special grave or perhaps a chapel or chapels. Other factors which may have influenced the orientation include the construction of new boundaries or other features in the cemetery (Stroud and Kemp 1993), or the position of the sun on the horizon at dawn, the proscribed time of burial (Rahtz 1978, 5). It is strange therefore that while the Group 1 and Group 3 burials are all on approximately the same orientation (SW–NE) and span the fifth/sixth to tenth/eleventh century, with

the only difference being the apparent absence of cists in Group 3, the Group 2 burials are apparently contemporary with Group 3 yet differently aligned. Perhaps segregation of the cemetery was taking place during the eighth to tenth century, with a new focus for one section of society, while the original focus was retained by another.

There is also a tendency for the earlier (pre-tenth-century) graves to be aligned WSW/ENE (at right angles to the revetment) and the later ones to be oriented E–W, parallel to the churches. There are individual exceptions to this, for example the cisted graves in Group 4 and the alignment of Group 5. These exceptions could perhaps be explained by the existence of a period of transition between the 10th and 12th century when dug-grave burials appear to retain the ‘early’ (WSW–ENE) orientation (*see* Groups 3 and 5) and cisted burials are aligned E–W with the church (*see* Group 4). The WSW–ENE burials are not aligned with the first stone churches and so may have been orientated to some other feature in the cemetery, such as a founder’s grave or more likely, an earlier monastic building, the remains of which have not been found.

4.6 Objects found with the burials

The only objects found with the skeletons were numerous white quartz pebbles, some unusually coloured stones, a few nails, a lead weight, an unidentifiable iron object and a few shroud pins. Several cist burials which contained white quartz pebbles were found predominantly within Groups 1, 2 and 3, although two pebbles were found within one burial in Group 6. A total of 129 such pebbles were found in layer 865 which sealed the N end of the Group 1 burials. No white quartz pebbles were found in Groups 4 and 5. These stones do not occur naturally within the beach sand and so appear to have been deliberately deposited with the earlier burials.

In the medieval period a coffin was sometimes only used to transport the body to the grave, the body having been wrapped in a shroud for burial. The shroud might be sewn up, or else just held together with shroud pins (Daniell 1997, 156). Of the five pins that were found, four were in post-medieval contexts with only one from a medieval context, layer 819, which sealed the platform in Trench L. This lack of pins probably shows that normal practice here was for shrouds to be sewn, if used at all. The presence of nails within Group 3 burials perhaps indicates the use of coffins from the 10th/11th century. Two burials (1033 and 887) were cisted graves that also contained nails, indicating that in rare cases coffins and stone cists were combined.

4.7 Population, age and sex

The age and sex of the articulated skeletons has been analysed, while the disarticulated bone was given only a

brief visual examination (Battley and Roberts, Chapter 6). It was found that of the 14 skeletons in Group 1 which could be aged and sexed, all were male, ranging in age from middle to mature adult, with a few young adults. The youngest individual was aged between 11 and 16 years. The absence of women and children is striking, and so this is clearly not a typical population. While it is likely that this is evidence for an early monastic male community (originating at some time between the fifth and the seventh century), it must be remembered that this particular trench was narrow and only represents a small part of the cemetery. It is possible that segregation of the sexes was practised within the cemetery even at this time, with the women and children buried elsewhere. None of the other excavated long-cist cemeteries in Scotland – Catstane (Lunt and Young in Cowie 1978, 196), Parkburn (Henshall 1956, 257), Hallow Hill (Proudfoot 1996) and Thornyhill (Rees 2002) – have produced exclusively male cemeteries. The Early Christian burials at St Ronan’s on Iona were in poor condition and could not be sexed or dated. The later burials however, were exclusively female, and O’Sullivan argues that this may have been the continuation of a much older practice (O’Sullivan 1994). The practice of separate worship, and possibly separate burial for women, does go back to the pre-Norman period at some Irish ecclesiastical sites such as Inismurray (Hamlin and Foley 1983, 44).

From her analysis of the cemetery at St Helen-on-the-Walls, Yorkshire, Sarah Collins has suggested that at least 80 per cent of the cemetery would have to be excavated before the age:sex ratios could be considered statistically reliable (S Collins pers comm). On that basis, excavation of at least another 60 per cent of the May cemetery would be required before the ratios could be considered statistically valid.

In Group 2 the skeletons were predominantly male, but included four females and four juveniles. Cist 1040 contained at least five individuals, two of which were male, and also the disarticulated bones of a neonate. This still does not represent a typical population, as the numbers of males greatly outnumbered the females. In the Group 3 burials all the skeletons, which could be aged and sexed, were male of young to middle age. However, it was noted that within the disarticulated bone (431) two female adults were present, and there may have been other female bones within the other disarticulated material. Taken as a whole, these pre-13th-century burials were predominantly male with a ratio of male:female of 8:1.

The presence of children does not argue against the cemetery belonging to a monastic community, as children above the age of about seven were sent to monasteries to be educated (Blair 1990, 240). Evidence for neonates is, however, less easy to explain, but given that only disarticulated bones of neonates were found, little can be said of the particular burial rite or location accorded them.

4.8 Multiple and prone burials

A characteristic of the cisted graves was that they contained multiple burials, with one cist containing at least five individuals. The careful excavation of the cists revealed that some burials had become disarticulated as they were pushed to one side to allow for a new burial to take place in the same cist. Multiple burials such as these are suggestive of family graves, but it is not possible to test this without DNA analysis (J Roberts pers comm). Multiple burials are also found at other long-cist cemeteries, including Parkburn (Henshall 1956, 258), Hallow Hill (Proudfoot 1996, 399–400). Catstane (Cowie 1978, 178), and Four Winds (Dalland 1992, 201).

Three bodies within the cemetery were buried in the prone position and all three were within Group 3. The skull and upper vertebrae of a possible fourth prone burial was seen beneath the church foundations (442, Illus 4.7), and while this burial may have been disturbed, the presence of the vertebrae suggests that any disturbance was minimal. Cist 1027 contained the prone burial of a mature adult female (981). Her hands were resting beneath her pelvis, and the lower jaw was present, although the rest of the skull was missing. In cist 1028 the second articulated burial was of a possible young adult male lying in a prone position (995). Only 60 per cent of this skeleton was present and the skull and most of both arms were missing. In cist 1028 the final burial was of an adult male (987), which was lying on its left side with the face down and the left leg slightly flexed. The skull was present, and the left arm was beneath the body.

Medieval Christians were usually buried in a supine position with the head to the W Daniell (1997) has noted that prone burials are more common in pagan periods than Christian ones, as at Sutton Hoo (Carver 1992) and Sewerby, an Anglo-Saxon burial (Hirst 1993). Occasionally a prone burial appears to have a 'gruesome' connection with either a violent death or having been buried alive. At St Margaret in Combusto in Norwich, those who had been hanged sometimes had their wrists tied together and were buried with a reversed orientation and in the prone position (Daniell 1997, 118). It would seem therefore that prone burials were generally associated with a disrespectful burial. A single prone burial was found in each of the cemeteries at Hallow Hill (Proudfoot 1996, 412–13), Addinston Farm near Lauder, Borders, (Rosehill 1872), Ardwall Island, Dumfries and Galloway (Thomas 1967), and Galson I (Stevenson 1952).

There is no pathological evidence of anything sinister, such as beheading or hanging, associated with the prone burials on the May. It is possible that some disrespect was intended, though, if so, whether this was to prevent resurrection or to hamper the spirit's ability to 'roam', is not known. However, it is possible also that burial in this position was accidental, given that the body may have been wrapped completely in a shroud.

4.9 Health, disease and injury

The analysis of the bones by Battley and Roberts (Chapter 6) and the teeth by Kerr (in Archive) has provided some clear indications of the individual health, disease and prevalence of injury within the sampled population. An attempt was made to divide the assemblage into the earlier and later burials for comparative purposes, thus Groups 1, 2 and 3 were placed in Assemblage A and Groups 4, 5 and 6 were in Assemblage B. It is acknowledged, however, that these assemblages are somewhat contrived as there is some chronological overlap between Groups 3 and 4 at the 1 σ level and more so at the 2 σ levels. Despite this, it was thought to be a useful exercise to see if any broad differences could be discerned between the periods before and after the establishment of the Cluniac monastery. Thus Assemblage A is broadly dated to between the fifth century and the thirteenth century and Assemblage B to the tenth to seventeenth century. Attempts were then made to compare the May populations with other medieval assemblages.

The only two examples of severe illnesses, that were almost certainly the cause of death, were the non-specific infections noted in a young girl (997, Group 2) and in a hunchback child (972, Group 4). Other notable individuals were a young adult with congenital abnormalities (971, Group 2), an individual with two rare dental cysts (443, Group 3), one with facial palsy (975, Group 2) and two cases of severe sinusitis (927 and 1117, disarticulated). From the observed condition of the bones it was even possible to suggest an occupation for some individuals including a left-handed bowman (1025, Group 2) and a ferryman (1137, Group 5). There was also an adult who had experienced a particularly arduous lifestyle, but for whom an occupation could not be attributed (1039, Group 2).

Comparisons were made between the two assemblages. In both groups spinal joint disease, dental disease and degenerative joint disease were the most frequent. Assemblage A had a higher level of degenerative disease, while Assemblage B had a higher rate of congenital abnormalities, metabolic disorders, and traumatic injuries. The high proportion of mature adults in Assemblage A (the pre-12th-century burials) perhaps explains the high percentage of degenerative joint disease noted (*see* Battley and Roberts, Chapter 6). There was a higher proportion of fractures in Assemblage A than in B. Within Assemblage A there were three examples of probable interpersonal violence. The skull of a mature male within cist 940 (959, Group 2) had possible cut marks, or else an unhealed fracture. A sternum bone from a charnel pit (context 496, Group 3) within the cloister exhibited a severe fracture. The young adult male in cist 983 (1022, Group 2) suffered a fractured molar which may have been the result of a fall or perhaps a sharp blow. The other six fractures appeared to be the result of falls. Within Assemblage B the

fractures consisted of a single adult female with a broken nose (1138, Group 5).

In general, the prevalence of traumatic injury and infectious disease is considered to be high compared to populations of the same period, and a brief assessment

of the disarticulated bone has revealed further examples of lesions. This could be interpreted as an indication that the site functioned as a hospital, with the sick attracted there for healing by both divine and medical means.