

Excavation of 10th-century burials at Chapelhall, Innellan, Argyll, 1994

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ABSTRACT

This paper describes results of salvage excavations undertaken on the remains of an early medieval cemetery at Chapelhall, Innellan, Argyll, in 1994. The limited excavations revealed a total of nine burials located in four trenches on a house building site. The graves indicate the existence of a late 10th-century burial ground associated with the site of a known chapel c 10 m to the north. At least three long cist burials were recognized, two of which were subsequently excavated. Finds recovered from the burial deposits included animal teeth and metallurgical waste.

INTRODUCTION

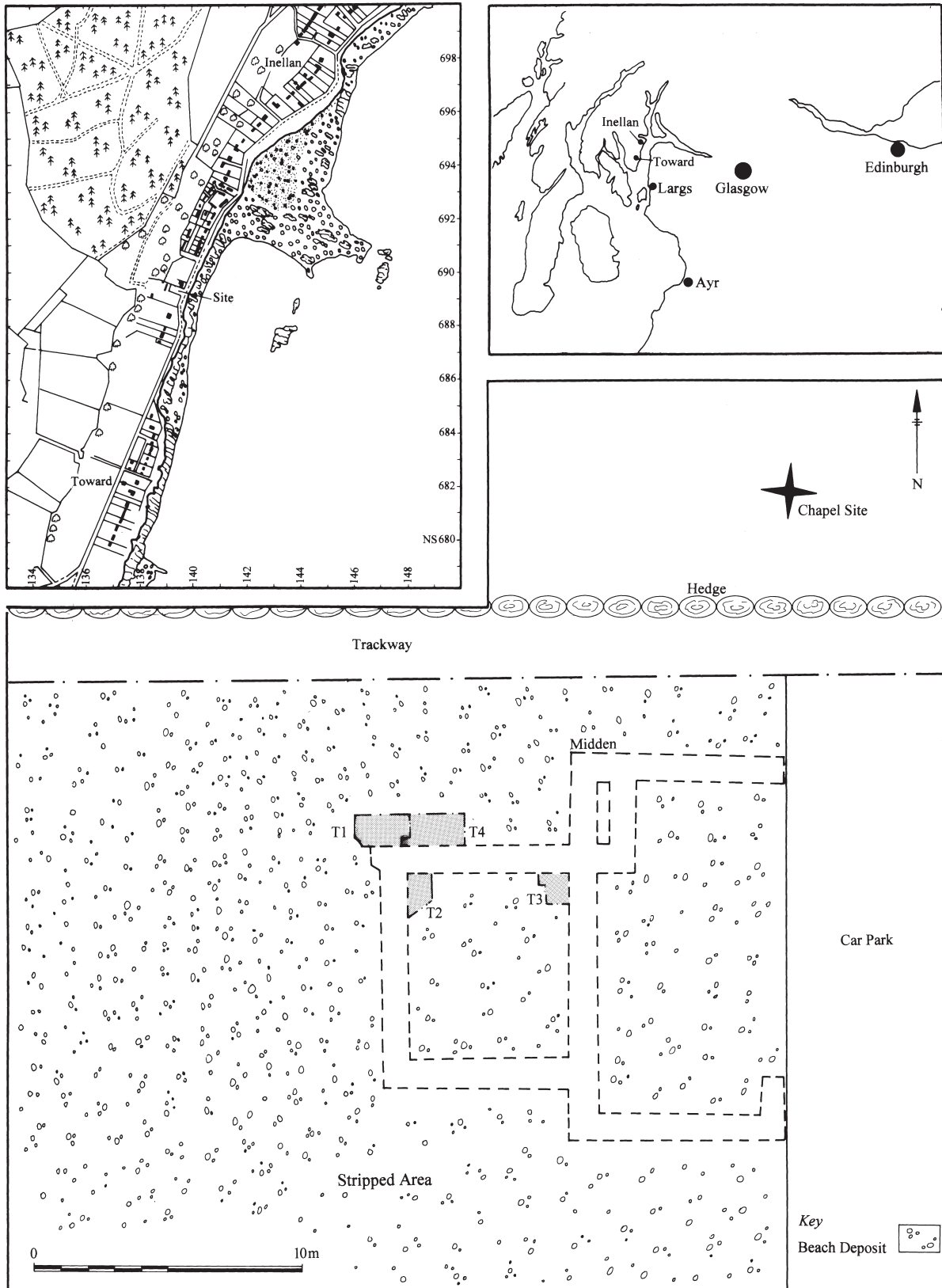
In early May 1994 Glasgow University Archaeological Research Division (GUARD) was requested by West of Scotland Archaeology Service (formerly Strathclyde Regional Council Heritage Division) to deal with a series of burials uncovered during foundation trenching at a house building plot on the outskirts of Innellan village, Argyll (NGR: NS 1394 6894). The site was located adjacent to the A815 coastal road between Dunoon and Toward, along the eastern side of the Cowal peninsula, southern Argyll, between the shore and Chapelhall House (illus 1). The salvage excavations were funded by the West of Scotland Archaeology Service (WoSAS), while the post-excavation work was grant-aided by Historic Scotland.

ARCHAEOLOGICAL BACKGROUND

The brief set by WoSAS was to assess whether the skeletal remains uncovered during foundation trenching constituted an archaeological discovery or a matter for the local police.

On arrival at the site it became clear that the skeletal remains visible in the upper section of the northern foundation trench were of an archaeological nature and represented a long cist burial. Preliminary assessment revealed at least three other burials located close to the cist initially discovered, all truncated by the foundation trench. After consultation with representatives from

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ILLUS 1 Location map and plan of Trenches 1-4 (Based on the Ordnance Survey map © Crown copyright)



ILLUS 2 Carved stone heads found near the excavation site in 1995

WoSAS, a short phase of salvage excavation was undertaken to recover the visibly truncated burials at the site, and to assess the probability of further burials in the vicinity.

The house plot at Innellan was the subject of a planning application to build a single house for a private individual. The site had already received outline planning consent and the developer (Archibald Ferguson Ltd) had begun to clear the plot by stripping the majority of the topsoil across the site. Following this stripping, the foundation trenches were dug. Toward the end of this process the first long cist burial was discovered. The area had previously been noted as the likely location of an early chapel site (Ordnance Survey 1864); however, the implications of this likelihood had been overlooked during the planning process.

SITE HISTORY

The first certain designation of the site as a chapel and burial ground appears to date from the first edition of the Ordnance Survey in 1864, when the foundations of a structure could still be identified at NS 1386 6894. The Ordnance Survey Name Book describes the site as ‘a small piece of ground enveloped by what are now only the remains of hedges, which formerly served as a burial ground, within it is distinctly visible the foundation of a Chapel’ (OS 1864, 101).

In 1964, during the digging of drains, two long cist burials were found by workmen and a short excavation was carried out by the Cowal Archaeological Society (1964), recovering further human remains. In 1973 the site of the chapel was visited once again by the Ordnance Survey; by this time it had disappeared underneath a modern bungalow.

In 1994 two pieces of sculptured stone were observed by the writer on a plot adjacent to the excavated area. The sculptured stones, which were already known to the owner of Chapelhall House, took the form of two carved stone heads (illus 2). One has been described as resembling a

Celtic stone head and the other appears to have been affixed to a wall at some point, as it still had mortar adhering to its back side. Both the heads are carved in rock types that are found locally (Rennie 1995, 61). Unfortunately, the circumstances of the ‘discovery’ of the two stone heads is unclear. It seems likely they are stray finds, although their recovery from the immediate vicinity of the burial ground and putative chapel site may be significant. The existence of a ‘Celtic’ stone head at Innellan may signify that the site had earlier, perhaps pre-Christian, religious associations (*pace* Foster 1998, 13). Alternatively, the heads may have been corbels in an early medieval chapel — if indeed one existed on the site.

Evidence of further burials has been noted and Rennie (1995, 61) has suggested that the burial ground may extend to 100 sq m. The various excavations of burials, the evidence for more and the discovery of the stone heads at Chapelhall, along with the place-name evidence and the existence of foundations of a supposed chapel in 1864, have suggested that Chapelhall may have been an important ecclesiastical site in early medieval Argyll (Atkinson 1994, 10; Rennie 1995). However, as will be demonstrated below, the documentary sources are surprisingly silent about an ecclesiastical foundation at Innellan.

EXCAVATION

Given the restricted time-scale for excavation and the context in which the burials were identified, the excavation methodology was designed to be reactive rather than pro-active. Time could be allotted to recover only the burials under threat from the building works, ie those in the foundation trenches. With this in mind, four trenches were opened to deal with the four truncated burials already observed.

RESULTS

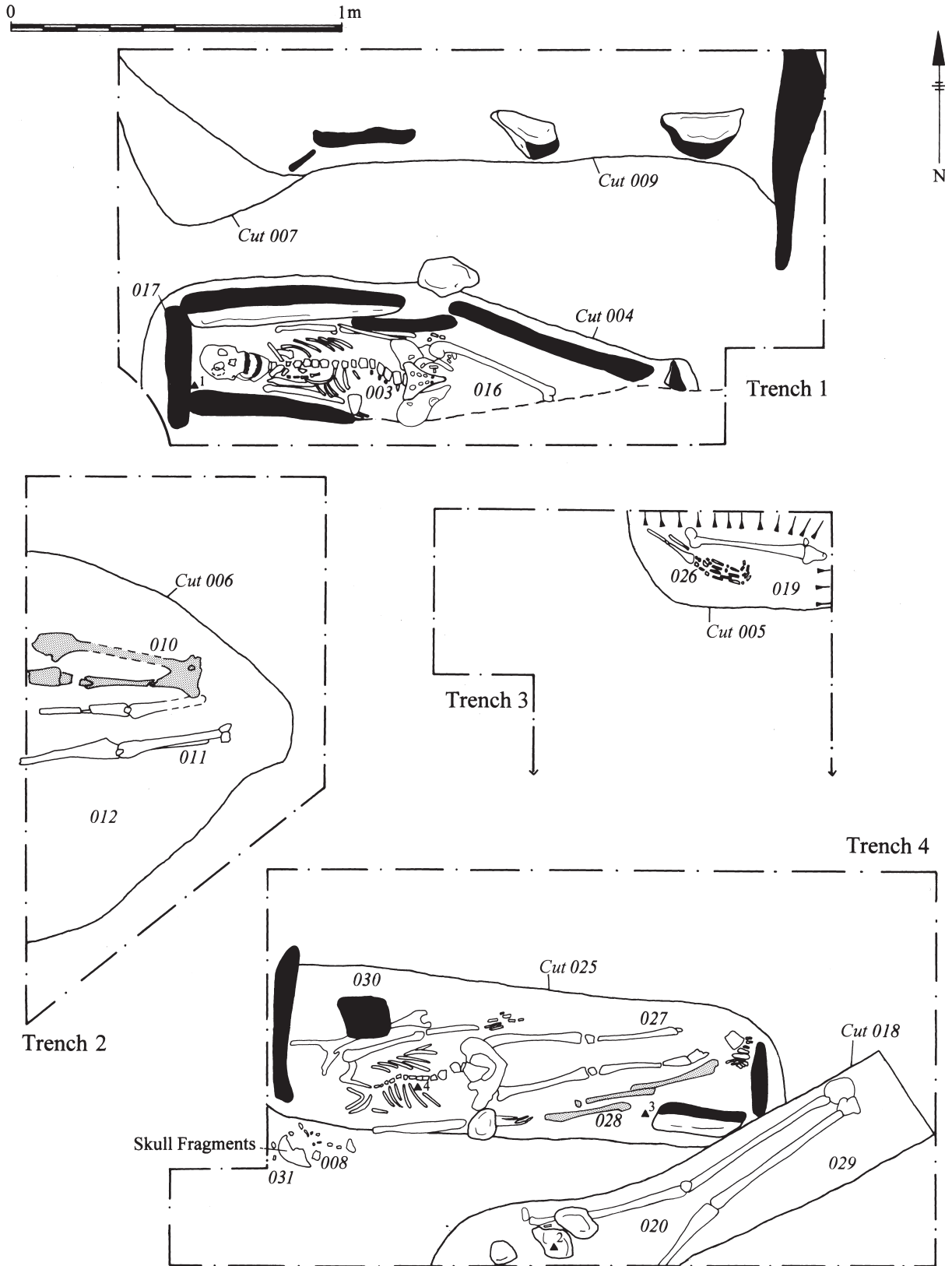
The salvage operation was undertaken over a weekend and entailed the simultaneous excavation of four trenches located on the edge of the foundation trenches (illus 1 & 3). The results of this work are detailed below on a trench-by-trench basis to provide a clearer understanding of the archaeological deposits encountered. The only other area within the plot which indicated archaeological activity was a large, deeply stratified midden deposit to the north-west of the group of burials. Given that this did not fall within the brief of the salvage excavation, this deposit was not investigated.

Trench 1

Burial 004 was the first to be noticed on the site. Prior to excavation of the topsoil layer (001), the partial collapse of the foundation trench took away the right leg and part of the cist of this burial.

Removal of the remnant topsoil layer (001) revealed three substantial red sandstone cap slabs. Removal of the cap stones (032) revealed a well-defined stone cist (017) with internal dimensions of 0.22 m in width at its widest (across the shoulders) and 1.38 m in length. The grave was oriented west/east and filled with a greyish-brown shell-sand with substantial gravel and pebble inclusions (016). A single inhumation (003) was uncovered inside it (illus 3).

Post-excavation analysis revealed this to be the remains of a female aged approximately 18 to 24 years (see Roberts, below, for details). The sequence of deposition had begun with the cutting of a shallow scoop (004) in the subsoil, which was then lined with slabs (017). The body was then laid in the cist and it was capped by slabs 032, prior to partial backfilling around and over the burial. At some stage after burial the cist sides had suffered from lateral pressure, which in turn had put pressure on the skeletal remains. This was evidenced by the splayed rib cage and the forced-back shoulders of the burial.



ILLUS 3 Detailed plans of burials in Trenches 1-4

There were no artefacts found on this skeleton; however, associated with it were a small iron object recovered in the south-eastern corner of the cist and a lump of charcoal recovered from beneath the skeleton. The iron object had partly fused onto the side and head slabs of the cist and was initially interpreted as a small bowl (Atkinson 1994, 7). X-ray radiography undertaken immediately after the excavation proved inconclusive, but later analyses of the sample suggest this artefact is most likely a severely weathered hearth bottom (see Photos-Jones, below, for analyses and discussion). The lump of charcoal recovered proved to be a section of hazel (*Corylus* sp) branch which had 16 growth rings visible (J Miller, pers comm). Although the piece was large enough for an AMS date, the decision was taken not to pursue this, as the charcoal was in a very eroded condition. Instead, a portion of the right tibia from the associated skeleton (003) was dated to cal AD 894–1036 (AA-28727).

Prior to excavation of burial 004, the trench was extended to the north. Two further possible grave cuts were identified: the first (007) lay on a slightly different alignment (SE/NW) to burial 004 and was truncated by the second burial in the northern half of the trench (009). Burial 009 was also a long cist burial, with the cist's southern side slabs clearly evident, but no capstones were noted. Neither burial (007 or 009) was excavated, as they were not under direct threat from the foundation trench, although they clearly implied the existence of more burials to the north of this area.

Trench 2

Trench 2 (illus 1 & 3) was located directly to the south of Trench 1 in an area where truncated human bone had been noted in the foundation trench. After removal of the remnant topsoil layer (001) a large red sandstone slab (033) was noted sealing another grave (006). Removal of capstone 033 revealed inhumations directly below it, with no side slabs forming a cist. The poor condition of the two skeletons (010 & 011) identified below the capstone suggests that the burials were not protected after interment and had partly adhered to the capstone.

The two skeletons beneath the capstone (010 & 011) had both been placed in the grave at the same time. They lay side by side, skeleton 010 face up and skeleton 011 face down. Post-excavation analysis of the remains suggests skeleton 010 was that of a 10 to 12-year-old child and skeleton 011 that of an adult. The poor preservation of the remains meant that little more could be said about them (see Roberts below) as only the lower portions of their bodies, from the top of the thigh down, had survived the foundation trenching. No further burials were observed in relation to this grave and no artefactual remains were encountered.

Trench 3

Trench 3 in the eastern part of the site, in an area where little evidence of burial activity was evident the foundation trenches (illus 1 & 3). Excavation here focused on a truncated burial visible in the corner of the east/west and north/south foundation trenches. Removal of the remnant topsoil (001) revealed a small portion of the burial (005) remaining, the rest having been truncated by the foundation trenches.

The human remains (026) encountered comprised predominantly the right side of the body, from the elbow downward, but also included the lower left femur. The remains lay in a shallow cut in the subsoil (005), which had been back-filled (019). The alignment and composition of the remains was suggestive of a burial oriented west/east. Analysis indicates that this was the grave of a juvenile, 12 to 16 years of age (see Roberts below). There was no evidence of a cist associated with this burial, as in the case of skeletons 020, 027 and 028 in Trench A; however, a radiocarbon assay of the right femur (cal AD 898–1155 (AA-18728) suggests contemporaneity between this burial and cist burial 004. No other associated burials were identified during excavation.

Trench 4

Trench 4 was located to the east of Trench 1 and was opened primarily to investigate burial 018, which was visible in the south-facing foundation trench section (illus 1 & 3). In clearing the topsoil to allow excavation

of burial 018, a skull was disturbed; it was assumed to represent a burial (008) lying within a disturbed upper horizon (031). Post-excavation analysis of this deposit identified not only the badly fragmented cranium, right scapula and two ribs of a 22 to 32-year-old female skeleton, but also revealed the presence of a neonate within the disturbed layer (see Roberts below).

After removal of burial 008, the remaining topsoil (001) was excavated to reveal a single burial (018) lying on a SW/NE alignment, truncated above the hips by the foundation trench; it was not associated with a cist, and had been placed in a shallow cut in the subsoil (018). The skeleton was in poor condition, and the bone was extremely soft and badly crushed in places (particularly the hips); however, it appears to have been an adolescent male (approx 17 to 20 years at the time of death) (see Roberts below). During post-excavation processing of this skeletal material, a cattle tooth with some mandibular bone adhering to it (SF 002) was recovered from the hip area (see Smith below).

Further excavation of Trench 4 revealed a complex burial (025) lying below burial 018. This burial was cleaned to allow a clearer assessment. Two skeletons (027 & 028) were found; they had been placed into the grave one on top of the other, lying in a long cist without a capstone (034). The two burials (027 lay above 028) may have been placed in the grave at the same time. They lay on a WSW/ENE alignment. Both skeletons were recorded *in situ* and left in place, as they were not under threat from the foundation trench.

Although a grave cut (025) was noted, this was undoubtedly related to cist 034 and not the upper burials (027 & 028). As in the case of the uncisted burial 018 (Trench 4 above), animal bones were found associated with the uncisted upper burials in grave 025. The upper skeleton (027) in grave 025 had a cattle tooth (immature pre-molar within its rib cage (SF 004). It seems probable that this was placed on top of skeleton 027, although it may have moved upward from the lower skeleton (028). The second animal tooth recovered (SF 003) was also a cattle tooth (immature upper molar) found adjacent to the right knee of the lower skeleton (028). It was unclear whether this was associated with the upper or lower skeleton in this grave.

Unstratified recovery

Prior to the archaeologists' arrival on the site, the remains of another burial had been noted and removed by the developer. This burial (skeleton 002) was located immediately to the south of Trench 1 within the east/west foundation trench. Although the head slab of the cist was still *in situ* in the disturbed western section of the trench, the skeletal material had been removed. Post-excavation analysis of the remains indicated that the single inhumation was female and 30 to 40 years old at the time of death (see Roberts below).

RADIOCARBON DATES

Two samples were selected from burials 004 and 005 for radiocarbon dating. Given the lack of suitable charcoal at the site, both dates were achieved by undertaking AMS dating of long bones from skeletons 003 and 026, the former recovered from a cisted context and the latter from an uncisted burial.

TABLE 1
Radiocarbon dates

Lab code	Sample material	Yrs BP	Calibrated dates
AA-28727	Skeleton 003, right Tibia (67.3 g); good preservation with no surface erosion	1040 ± 45 BP	1 sigma AD 971–1020 2 sigma AD 894–1036
AA-28728	Skeleton 026, right femur (39.6 g); fair preservation with no surface erosion	1015 ± 50 BP	1 sigma AD 982–1029 2 sigma AD 898–1155

HUMAN SKELETAL REMAINS

Julie Roberts

This report comprises an analysis of the human skeletal remains uncovered during the salvage excavations at Chapelhall. Two of the skeletons were buried in long cists (003 & 002) and the remainder were in graves. All were single burials with the exception of 010 and 011, who were buried in the same grave, one face up and the other face down. Seven skeletons were analysed, and a further individual, a neonate associated with burial 008, was identified.

PRESERVATION

The condition of each burial was assessed by determining the approximate percentage of the skeleton surviving, the amount of fragmentation present, and the degree of surface erosion to the bones. The state of preservation of the skeletons varied and is summarized in Table 2 below.

TABLE 2

Preservation of remains

Context	% Skeleton surviving and fragmentation	Surface erosion	Preservation
003	>80%. Only the cranium was fragmentary	None	Good
002	10%. Moderate amount of fragmentation	Minimal	Fair
026	10%. Moderate amount of fragmentation	Minimal	Fair
008	<10%. Very fragmentary	Moderate	Poor
020	<10%. Very fragmentary	Substantial	Poor
010	<10%. Very fragmentary	Substantial	Poor
011	<20%. Very fragmentary	Moderate	Fair

METHODOLOGY

Age at death

The methods used to determine the age at death of an individual are dependent upon the survival of certain skeletal elements. It was possible to use the following methods on the Chapelhall skeletons: epiphyseal fusion (Buikstra & Ubelaker 1994); dental development and attrition (Miles 1963; Ubelaker 1989); auricular surface age (Lovejoy *et al* 1985), and sternal ends of ribs (Iscan & Loth 1986).

Determination of sex

Estimations of sex in skeletal remains are based primarily on the differences in male and female pelvic and cranial morphology, and the sizes of the articular surfaces of the long bones. Typical accuracies for the determination of sex in adult skeletal remains are 95–100% using whole skeletons, 90–98% using the pelvis alone and 80–90% using the cranium or post-cranial skeleton, excluding the pelvis (Krogman & Iscan 1986).

Stature and build

Living stature may be estimated by measuring intact limb bones and adding a factor for the non-bone contribution (Ubelaker 1989). In this instance, stature was based on calculations formulated for modern white American females (Trotter 1970), as no such standards have yet been compiled

for British archaeological populations. It was possible to estimate the stature of only one of the individuals from Chapelhall, skeleton 003.

Non-metric traits

Non-metric traits are skeletal variants which cannot be measured on a metric scale, but are simply recorded as being present or absent. Although in this instance the size of the sample was small, non-metric traits were recorded in order that any significant findings might be compared with data from other sites of a similar date to Chapelhall.

Pathology

Each skeletal element was examined individually for evidence of pathological conditions, which were then classified according to cause using the following categories: trauma, degenerative joint disease, dental disease, congenital abnormality, infectious disease, neoplastic disease, metabolic disease, auto immune disease and circulatory disease (Ortner & Putschar 1987; Roberts & Manchester 1997).

RESULTS

Age and sex

It can be seen from Table 3 below that six of the seven individuals of known age died before the age of 35 years, with the majority being aged under 25 years. Immature individuals made up 57% of the total sample.

As the burial ground was not excavated in its entirety, it is not known whether the short life expectancy observed in this small group of individuals was representative of the population as a whole. Evidence from much larger sites of a comparable date on the east coast of Scotland does, however, suggest that death before early middle age was common. At Kinnoul Street, Perth, no individuals older than early middle age were present, the average life-span being less than 31–35 years (Bruce 1985), and at Linlithgow the infant mortality rate was 58%, with only 5–8% of the population surviving into old age (Cross & Bruce 1989, 119–41).

Females outnumbered males by a ratio of 3:1 at Chapelhall, but as 50% of the sample were of unknown sex no valid conclusions could be drawn from this. At the contemporary cemetery of Whithorn (Cardy 1994), males and females were present in approximately equal numbers.

TABLE 3

Sex and ages at death of individuals

Context	Age	Sex
003	18–24 years	Female
002	30–40 years	Female
020	17–20 years	Male
026	12–16 years	NA
010	9–12 years	NA
011	Adult	Unknown
008	22–32 years	Female
008	Neonate	NA

Body build

It was possible to ascertain the stature of only one individual, skeleton 003. This was estimated at 161 cm, or 5 ft 2 in, based on the lengths of the femur and tibia combined. This compares well with the average stature of 161.8 cm observed in the female cist burials at the Isle of May.

The meric indices of skeleton 003 were 77.2 (right femur) and 76.9 (left femur). The meric index of the right femur of 026 was 76.5. This indicated that both individuals had platymeric femurs, ie the proximal shaft was flattened. This is common in pre-industrial populations, although the reasons are not yet fully understood. These results are comparable with those from medieval populations at Dunbar (Bruce 1994), Whithorn (Cardy 1994) and the Isle of May (Roberts & Battley forthcoming).

The cnemic indices of the right and left tibiae of skeleton 003 were 78.6 and 79.4, respectively indicating that they were eurycnemic, ie having a rounded proximal shaft. This combination of a platymeric femur and a eurycnemic tibia was again common in the Isle of May, Whithorn and Dunbar collections, although mesocnemic tibiae were also frequently recorded.

Repeated stress upon any muscle may result in increased bone production at its insertion point on the skeleton. Several of the individuals displayed this phenomenon, although with the exception of 002 none was severe or unusual enough to be termed enthesopathies.

Skeleton 011 had a pronounced, rugged right linea aspera, the insertion line for the powerful adductor muscles of the hip and thigh, and a rugged right patella and calcaneus at the insertion points for the quadriceps and tendo achilles respectively. In addition, the insertion points for the inter osseous ligaments on the right tibia and fibula were pronounced. Repeated stress on these particular muscles might be associated with an activity such as running, or walking for long distances.

Skeleton 002 had bilateral mandibular tori-exostoses on the inner surface of the mandible at the mid point of the insertion for the mylohyoid muscle. This muscle, together with the geniohyoid and digastric, is responsible for swallowing and (when the hyoid is fixed) depressing the mandible to open the jaw. These anomalies may be indicative of excessive chewing, which might also explain the heavy dental attrition, particularly of the anterior teeth, seen in this individual. This could be related to a consistently tough diet or to a specific occupation, for example, chewing leather in order to soften it to make clothes and shoes, as observed in the Inuits (Merbs 1983). Unfortunately, the mandibular condyles were not present and so any evidence of associated degenerative joint disease could not be detected. Skeleton 002 also displayed a pronounced insertion point for teres minor on the left scapula. This muscle is responsible for lateral rotation of the humerus and, together with the three other rotator cuff muscles, for stabilizing the shoulder joint.

Non-metric traits

Identification of non-metric traits was limited by the fragmentary nature of the remains. Only three of the individuals had crania, all of which were fragmentary.

There were no striking similarities or differences in the traits observed, but the sample size was so small that any conclusions drawn would be statistically invalid. The information may be of use, however, for comparisons with previously excavated material, or with any skeletons excavated from the site in the future. With the exception of the double condylar facet present on the right side in skeleton 003, the few cranial traits which were identified were among those most commonly observed in the Isle of May assemblage (Roberts & Battley forthcoming).

Post-cranial traits were observed on only two of the skeletons, 003 and 002, and again this was thought to be due in part to the fragmented state of the bones. The bilateral third trochanters (of which the right was more pronounced) and the left peroneal tubercle identified on skeleton 003 may have been related to muscle usage.

Pathology

Little pathology was observed on the skeletal remains from Chapelhall. There was virtually no evidence of degenerative joint disease, infectious disease or traumatic injury, conditions commonly found in archaeological populations. However, the small sample size and the young ages of the majority of the individuals have some bearing on these results.

Dental disease

All three of the skeletons with teeth displayed some evidence of dental pathology. This included calculus, dental enamel hypoplasia (DEH), periodontal disease, ante mortem tooth loss (AMTL) and a dental abscess.

Calculus Dental calculus has been associated with meat- rather than cereal-based diets (Perzigian *et al* 1984). The severity of the calculus observed in the Chapelhall skeletons was graded using standards developed by Brothwell (1981). Table 4 summarizes the severity and location of the calculus on each individual.

TABLE 4

Severity and distribution of calculus

Context	Severity	Location
008	Flecks	Predominantly mesial and distal surfaces of mandibular teeth
003*	Slight	Buccal and distal surfaces of maxillary molars, all sides of left mandibular molars, lingual surfaces of right mandibular anterior teeth, distal and lingual surfaces of right mandibular molars
002	Medium Heavy	All surfaces of the mandibular teeth, particularly heavy on lingual surface, buccal surfaces of left maxillary 2nd pre-molar and 1st molar

*Slight calculus was the only form of dental pathology from which skeleton 003 suffered.

Periodontal disease and AMTL Periodontal disease of medium severity (Brothwell 1981) was identified in skeleton 002 around the right mandibular canine, and extending from the left maxillary first incisor to the first premolar. Both incisors, the canine and the first pre-molar had been lost ante mortem as a result of the disease.

Dental enamel hypoplasia (DEH) DEH is the name given to defects which appear in the enamel of the tooth, representing a cessation in its growth and development. These defects are recognized as stress indicators, with febrile infections, malnutrition and metabolic disorders cited as possible causes (Goodman *et al* 1984, 13–39; Aufderheide & Rodriguez-Martin 1988). The condition was found to be present in skeletons 003 and 008.

Abscesses Dental abscesses are infections of the alveolar bone which occur as a result of disease in and around the apex of the tooth. Only one abscess was identified, in skeleton 002. It was a moderately sized, externally draining, periapical abscess located above the left maxillary first pre-molar.

Dental anomalies The third mandibular molars of skeleton 002 were not present, although X-rays of the mandibles indicated they were congenitally absent. An example of dental crowding was observed in skeleton 008, where the angle of the socket for the left mandibular canine suggested that it was rotated, with the mesial side turning inward.

Metabolic disease

Cribriform orbitalia and a possible case of porotic hyperostosis were identified in skeletons 003 and 008 respectively. Porotic hyperostosis is the skeletal manifestation of iron deficiency anaemia, which when found in the eye socket is termed cribriform orbitalia. It is characterized by a pitting of the outer layer of the skull or eye orbits — a result of the body's attempt to increase the amount of iron in the blood by expanding the red

blood cell producing marrow (Chamberlain 1994). The condition develops in childhood, but the skeletal effects remain throughout adulthood. There are many causes of iron deficiency anaemia; among the most common is the lack of absorbable iron in the diet and a high pathogen load within the body (Stuart Macadam 1992, 39–47).

The cribra orbitalia in skeleton 003 was classified as type 2–3, ie of moderate severity (Stuart Macadam 1992, 39–47), but it was difficult to assess the severity of the porotic hyperostosis in skeleton 008, as the cranium was fragmented into many small pieces. It is possible that there may have been a relationship between these metabolic conditions and the dental enamel hypoplasia identified in the same individuals (see above), although this cannot be proven as there are so many factors involved in the aetiology of both.

Degenerative joint disease

Degenerative joint disease is the most common pathological condition found in archaeological populations. The aetiology of the disease is multi-factorial, the most common causes being age and repeated stress. It was present in a mild form on only two of the skeletons, 002 and 011. In skeleton 002 it occurred on the medial condyle of the left femur and the right head of humerus (the left knee and right shoulder), two left upper ribs and the second cervical vertebra, characterized by porosity and osteophytes. In skeleton 011 there was slight porosity of both femoral condyles and the superior surface of the right talus (the ankle). In addition, the right patella had osteophytes around the medial margin of the articular surface.

Such a low prevalence of degenerative joint disease is in contrast to the situation at the Isle of May, where 63.6 % of the cist burials suffered from degenerative joint disease, although this was predominantly slight, and 84.2% suffered from some form of spinal joint disease (Roberts & Battley forthcoming). This low frequency at Chapelhall is almost certainly related to the young ages of the individuals.

Two schmorl's nodes were observed on the third and fourth lumbar vertebrae of skeleton 003. These lesions represent herniations of the contents of the intervertebral discs onto the superior and inferior surfaces of the vertebral body. They are thought to be related to traumatic injury and/or have an underlying congenital cause. They are often found in younger individuals where no other form of degenerative disease exists, and they have been found to be associated with repeated flexion and lateral bending (Kennedy 1989, 129–60).

Infection

Only two possible examples of infection were identified; both were non-specific (caused by an unknown micro-organism) and superficial. An oval-shaped area of periosteal new bone growth was observed on the medial condyle of the left femur of skeleton 011. On skeleton 026 an area of new bone growth was evident on the anterior surface of the right proximal femur. Neither of these conditions was serious and both were probably the result of spread from an overlying soft tissue infection.

Circulatory disease

Osteochondritis dissecans is a condition in which part of the articular cartilage and underlying bone (usually in the form of a small plug) becomes detached, leaving a smooth, clearly circumscribed area on the joint surface. It may represent aseptic vascular necrosis (Ortner & Putschar 1987) or be due to trauma, resulting from impaction of one surface against another (Forrester & Brown 1987). It is most frequently seen in adolescent or young males, the most commonly affected joint surfaces being the distal femur, proximal tibia, the elbow, the talus and the first metatarsal.

Osteochondritis dissecans was identified on the medial condyle of the right femur of skeleton 026, characterized by a moderately large lesion (15.5 mm by 11.4 mm) containing a partly healed plug of bone. On the left medial condyle there was a lesion of a similar size, but with no evidence of detached bone.

CONCLUSIONS

A total of seven individuals was analysed: three of these were single articulated skeletons (003, 020 & 026), two were articulated individuals from a double burial (010 & 011), and two were disarticulated deposits (002 & 008). A further individual was identified among the disarticulated remains, a neonate represented by only two skeletal elements — a petrous temporal and the neural arch of a cervical vertebra, unfused in the midline. The relationship between the neonate and the adult female (skeleton 008) is unclear. The association may have been coincidental, as the deposit was unstratified, or there may have been some familial connection.

A high proportion of the group were immature individuals and young adults, and both sexes were represented. The only stature obtained (skeleton 003) was comparable with the average height observed in the female cist burials on the Isle of May. No serious pathological conditions were identified, and there was a particularly low frequency of degenerative joint disease. This is thought to be attributable both to the young ages of the individuals and to the poor preservation of many of the articular surfaces of the bones.

ANIMAL TEETH

Catherine Smith

Among the human remains were found four animal teeth. All of the teeth proved to be from cattle, and were from immature or young adult animals. Two of the teeth were associated with skeleton 020 in grave 018, one with skeleton 027, and one with skeleton 028; both of the latter skeletons were recovered from grave 025.

TABLE 5
Location and origin of cattle teeth associated with human burials

Skeleton	Location of tooth	Tooth	Age of animal
027	Found in area of rib cage	Left lower third or fourth pre-molar	Enamel unworn; no dentine exposure; roots open. Immature
020	Found during post-excavation processing of skeleton	Left lower third molar. Some mandibular bone adhering on buccal aspect of tooth	5th cusp (3rd pillar) not yet in wear. Grant (1982, 91–107) wear stage D. Immature/young adult
020	Found in pelvis	Incisor	Only slight enamel wear; root open. Immature
028	Found at right knee	Right upper molar	Only slight enamel wear. Immature

With the exception of the lower third molar associated with skeleton 020, which still retained a piece of very poorly preserved mandibular bone, all of the cattle teeth were detached from the jaw. The presence of adhering mandibular bone perhaps indicates that the tooth had not been much handled before deposition. A second tooth was recovered from skeleton 020, which may imply deposition just prior to burial.

It is probable that the animal teeth were deliberately placed on the bodies at the time of burial (although contamination from manured plough soil while digging the graves is a further possibility). Deliberate deposition of cattle teeth in human burials has been noted at archaeological sites elsewhere in Scotland. A burial of a child in the Early Christian long cist cemetery at Hallow Hill, St Andrews, Fife (Proudfoot 1996), was accompanied by an assortment of objects, thought to have been contained in a draw-string bag placed across the pelvis (no evidence of the bag itself remained). Among the objects were bronze artefacts of Roman date, two white pebbles

and seven cattle teeth. It is notable that five of the seven teeth from Hallow Hill probably came from matched left and right mandibles although, in contrast to the lower third molar from skeleton 020 at Chapelhall, there was no trace of the original mandibular bone remaining (Smith 1996, 431–4).

At Whithorn, graves dating to between AD 1250–1600 also contained white pebbles and cattle teeth (Hill 1997, 472). It may be that there was a long-standing tradition of placing cattle teeth in inhumation burials, of which those at Innellan were part. Certainly, cattle were of prime importance to the domestic economy of Scotland from the earliest period and carried a prestige value superior to that of sheep, until the later medieval period.

METALLURGICAL WASTE

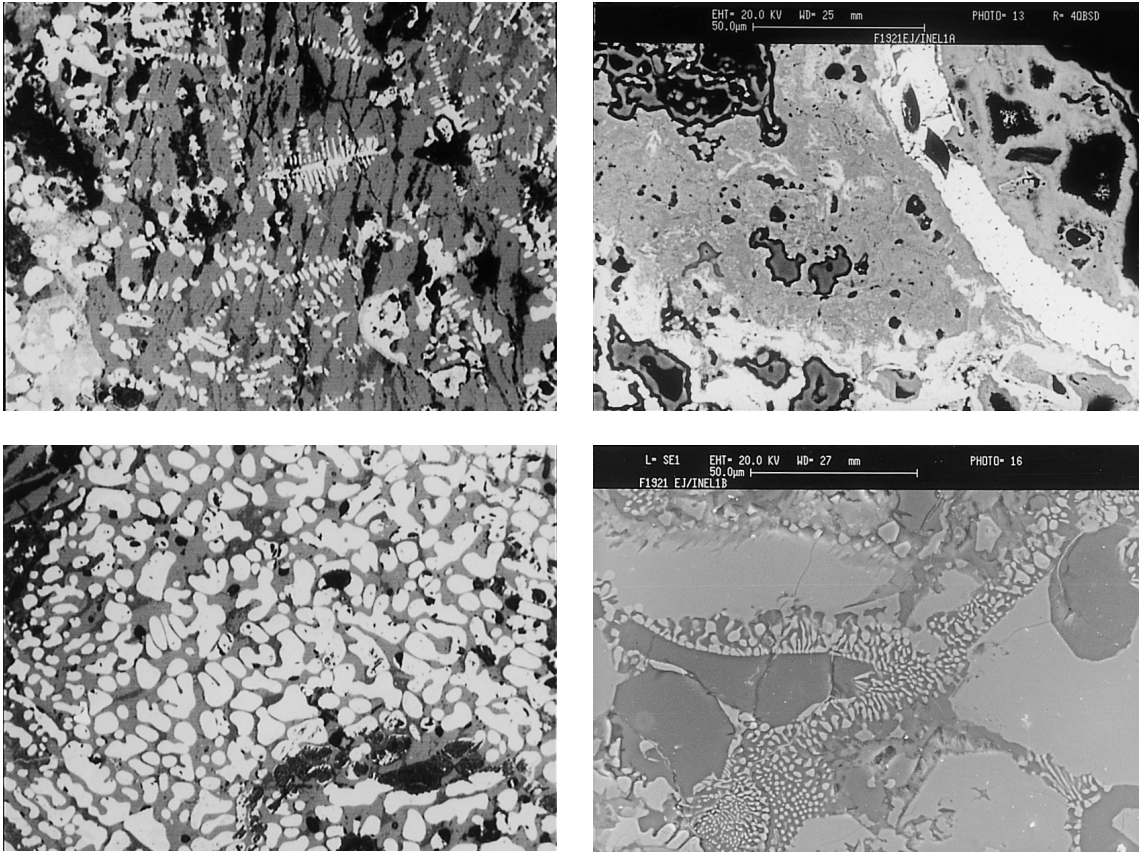
Effie Photos-Jones

During the course of excavation at Chapelhall, one lump of metallurgical waste was recovered from cist burial 004 (illus 4). This was analysed to establish whether it was originally a bloom (the iron derived from the smelting of ore in a bloomery furnace) or was actually waste. Since examination of the skeletal remains revealed that the burial belonged to a female (see Roberts above), the inclusion of what may have been a symbolic object within the grave required consideration as well.

The metallurgical waste (SF 001), found in Trench 1 in the south-west corner of the stone cist behind the head of the single inhumation, was originally thought to be a ‘small iron object . . . provisionally interpreted as a small bowl’ (Atkinson 1994, 3). It was subjected to X-ray radiography, but the results were reported to be inconclusive. The location of the metallurgical waste within the cist would appear to suggest its deliberate deposition with the skeletal remains in the grave in the 10th century.



ILLUS 4 Metallurgical waste found with skeleton 003 — a young adult female



ILLUS 5 SEM-EDAX images of sections from the metallurgical waste found with skeleton 003

ANALYTICAL INVESTIGATION

Description

The lump of metallurgical waste was 70 mm along its long axis, 50 mm along its short axis and c 30 mm thick. It resembled a smithing hearth bottom on account of its oval and slightly plano-convex shape. On the surface it had a rough texture. In section it was porous and brown purplish-black in colour. It was relatively heavy (c 200 g) with evident signs of vitrification. Small quartz pebbles were trapped on the surface, perhaps on account of the grave being filled with greyish brown shell-sand with pebble and gravel inclusions. There was no sign of charcoal imprints.

Methodology

The object was sectioned at three places. Three samples (INEL1a, INEL1b, INEL1c) were subjected to optical examination and chemical analyses. Sectioning was carried out with a diamond saw and the sections were mounted on fast-setting metallographic resin. The samples were ground with a series of silicon carbide papers and then polished sequentially with diamond pastes of 6 micron, 3 micron and 1 micron size. They were examined under the metallographic microscope, and subsequently two of them (INEL1a, INEL1b) were carbon-coated in preparation for investigation and analysis with the Scanning Electron Microscope with Energy Dispersive Analyser (SEM-EDAX).

INEL1a

Optical and SEM-EDAX examination This sample is characterized by an advanced level of weathering to the extent that no distinct mineralogical phases are discernible (illus 5b). Both iron-rich and silicate phases have disappeared, with only some fayalite needles (FeO SiO_2) discernible in places. As a result little can be said about the original state of this sample.

SEM-EDAX analysis The bulk composition of the sample is represented by two area analyses carried out at two different sections of the polished surface at x30 magnification (see analyses 1 and 2 and their mean in Table 6). They revealed an iron silicate matrix which is manganese-rich with minor amounts of calcium and aluminium. High manganese levels reflect the type of slags associated with the Highlands (Photos-Jones *et al* 1998) and ultimately the local bog ore. Given the high iron content of this sample, a localized waterlogged environment may have been sufficient reason for its state of preservation.

TABLE 6
SEM-EDAX analysis of metallurgical waste

INEL1a	Na2O	K2O	Al2O3	SiO2	MgO	CaO	TiO2	MnO	FeO	P2O5	SO3	BaO
AN1	0.39	0.3	1.99	17.69	0.61	1.54	0	3.54	73.19	0.47	0.27	0
An2	0.29	0.19	2.17	17.37	0.53	1.03	0.09	3.38	74.45	0.37	0.13	0
mean	0.34	0.245	2.08	17.53	0.57	1.285	0.045	3.46	73.82	0.42	0.2	0
AN3	0	0	0.07	0.64	0.13	0	0	0	98.68	0	0.33	0.16
AN4	0.07	0.04	0	0.75	0.02	0.07	0	0.1	97.32	1.53	0.07	0.03
AN5	0.14	0.02	0.9	14.37	0.23	0.72	0	1.3	81.74	0	0.53	0.06
AN6	0.09	0.03	0.01	2.74	0.06	0.12	0.02	0.17	96.39	0.1	0.27	0

Key

AN1 = AN2 = area analysis at x30

AN3 = AN4 metallic(?) (more likely an iron oxide) inclusions (spot analysis)

AN5 = slag 'inclusion' (spot analysis)

AN6 = corroded area (spot analysis)

All analyses are normalised to 100%. Unnormalised totals: c 80–90%

INEL1a	Na2O	K2O	Al2O3	SiO2	MgO	CaO	TiO2	MnO	FeO	P2O5	SO3	BaO
AN1	0.34	2.02	6.29	27.6	0.65	2.03	0.38	7.54	52.47	0.27	0.23	0.18
An2	0.38	2.09	6.46	25.24	0.81	2.55	0.29	10.39	51.14	0.26	0.06	0.31
mean	0.36	2.055	6.375	26.42	0.73	2.29	0.335	8.965	51.805	0.265	0.145	0.245
AN3	0	0.01	0	1.11	0	0	0.02	0.26	98.37	0.01	0.21	0
AN4	0.36	22.77	21.63	53.09	0.01	0	0	0.13	1.05	0.13	0.03	0.79

Key

AN1 = AN2 = area analysis at x70

AN3 = metallic(?) (more likely an iron oxide) inclusions (spot analysis)

AN4 = glassy phase (spot analysis)

INEL1b

Optical and SEM-EDAX examination INEL1b was in a much better state of preservation than INEL1a. Fayalite needles (light grey), fine dendrites of wustite (FeO — bright white) and an interstitial glassy matrix (black) were all present, and illus 5c and 5d show different amounts of each phase. Unreacted quartz grains were also obvious, suggesting the presence of excess silica (gravel) in the vicinity of where the slag was produced (illus 5e). Given the gravelly environment in which the sample was found, it is likely that the sample was manufactured locally.

SEM-EDAX analysis The bulk composition of the sample is represented by two area analyses carried out at two different sections of the polished surface at x70 magnification (see analyses 1 and 2 and their mean, Table 5). They revealed an iron silicate matrix which is manganese-rich, similar to that of INEL1a.

DISCUSSION

The recovery of the skeletal remains of metalsmiths buried alongside symbols of their trade is not unusual. From the Bronze Age onward, the professional status of these crafts people has been inferred on the basis of these artefacts alone (Tylecote 1987). The tools and other artefacts can include finished or unfinished objects, hammers, crucibles, moulds and occasionally even fragments of slag. The implication may be that for the dead to be honoured, the valuable symbols of their trade should lie alongside them.

A bloom, the raw metal, certainly fits that category. On the other hand, a single piece of slag, generally understood as waste, could not possibly confer the same status. Of course there could be room for error; a small smithing hearth bottom could easily be mistaken for a small bloom, not by the deceased, but by bereaved family and friends. In examining the Innellan metallurgical waste, the first question to address is whether it was originally a piece of bloom. In its more advanced (worked) form, a bloom could be a currency bar and might have been seen as valuable for that reason. The Innellan piece is more likely to be a piece of slag rather than a bloom; however, the extensive degree of weathering leaves this somewhat open to debate. The SEM and optical microscope results show the high degree of unhomogeneity, both chemical and mineralogical, within various sections of the same object and indeed the same sample (INEL1b). This unhomogeneity is aggravated in places as a result of burial. The piece was most likely chosen for its shape rather than its content.

It is difficult to speculate on the reasons why this particular object would have been placed intentionally in the burial of a female dating to the late 10th century in Argyll. Tylecote (1987) has given three classifications for the status of blacksmiths, all assumed to be men: those who were highly regarded, with chiefly status and perhaps religious duties as well, as in the case of the smiths described in the Welsh and Irish annals; smiths whose status was equal to that of other craftsmen but who formed a tribe of their own, like those in parts of Africa; and smiths who did not enjoy any status, ie slaves, like those operating in many parts of the Roman Empire. This classification serves only as a rough generalization. Highland smiths, along with bards, did have special status within Highland society, at least as far as can be deduced from oral tradition, and many were attached to clan chiefs (Grant & Cheape 1987, 82, 197; Atkinson & Photos-Jones 1999, 273). However, there are no references to female smiths. Female smiths are part of a South Asian (Indian) tradition but not normally, to our knowledge, of a northern European one.

In conclusion, there are perhaps two options for the young female (aged between 19 and 22 years old; see Roberts above) buried at Innellan. Both are speculative but one perhaps more plausible than the other. She could have been a gypsy smith, in the long tradition of gypsies in India, assuming that these female 'tinkers' did operate in the Highlands at the end of the first millennium AD. Had this been the case, however, it is unlikely that she would have been given a burial within a cist in what was consecrated ground. Alternatively, she could have been the wife or daughter of a smith, perhaps his assistant in the trade. Dying before her husband or father, she would not have merited burial with the tools of his trade, since these would have been vital to the continuation of his professional life. In the absence of any other gifts to offer, a nicely shaped piece of slag, part bloom and part waste, could have denoted her association with the trade as well as being a loving tribute to her from her bereaved family.

HISTORICAL AND ECCLESIASTICAL CONTEXT OF COWAL

Alan Rutherford

The history of the early medieval and even the later medieval church in Cowal and Argyll as a whole is very fragmentary. The late Ian Cowan (1995, 39) stated when discussing the dioceses of Argyll and the Isles that ‘if the evolution of the parochial system in both dioceses is obscure, for no evidence at all is forthcoming in Argyll, so too is much of the early parochial history’. In the Early Christian period, historical references to ecclesiastical activity in Mid Argyll and Cowal are extremely scarce, even when compared to other areas of Argyll (RCAHMS 1992, 3). This contrasts with descriptions of secular activities such as the sieges of Dunadd. The total collection consists of two references in Adomnán’s *Life of Columba*: one to a lost monastery, *Cella Diuni*, and the other to a meeting of Columba and Gaulish sailors at *Caput Regionis*, perhaps Dunadd (cited in RCAHMS 1992, 3).

In his discussion of the Church in Argyll, and in coming to his conclusions, Cowan depends upon written evidence. However, almost as if in compensation for the lack of historical references, the material evidence for the early Church in Mid Argyll and Cowal is especially rich, second only to Iona and possibly Islay. The 46 sites which have yielded evidence of Early Christian activity amply demonstrate the vitality of the Church in the region.

The Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS) has noted an east/west division, creating two areas. The first consists of the Atlantic coast and the region around Kilmartin and Dunadd and is characterized by a large number of sculptured stones and relatively few chapel sites. The second area consists of Cowal and is characterized by a reversal of the situation in Mid Argyll, with relatively few sculptured stones, but relatively numerous chapel sites.

Despite the large amount of material evidence relating to the Early Christian period in Cowal and in Argyll as a whole, there has been little synthesis of this evidence and the history of the period remains obscure well into later medieval years (RCAHMS 1992; Rennie 1993; Fisher 1997). The greater part of Cowal was held by the Dál Riata, a confederation of kindred with close connections to north-east Ireland, who were initially grouped together in three lineages: the *Cenél nOengusa* (Islay), the *Cenél Loairn* (Lorn, Colonsay, Mull, Tiree, Coll, and Ardnamurchan), and the *Cenél nGabhráin* (Kintyre, Gigha, Jura, and Cowal), the latter were often in a dominant position over the other groups (Foster 1998, 7).

By the late ninth century, much of the west coast of Scotland was suffering incursions from Norse raiders; Iona was first attacked in 795. Norse settlement included the Northern Isles, the Outer and Inner Hebrides and the Isle of Man, and may have pushed the Dál Riata eastward into the Pictish kingdom (Broun 1994). However, despite this extensive settlement in the Western Isles, there is little evidence of settlement on the mainland of Argyll, suggesting that Dál Riata power did not collapse on the mainland. The burial evidence for Scandinavian settlement in Argyll is very much concentrated on the Isles, with few Scandinavian place-names in Cowal; Coustonn and Troustan on Loch Striven and Laglingartan and Orniadale on Loch Riddon are among them (Rennie 1993, 55).

The secular history of the area is especially important when discussing a chapel site. There were close links between the Dál Riata and the Columban Church, centred on Iona, which was maintained and extended well into the ninth century when the relics of Columba were transferred to Dunkeld (Broun 1994). However, although the western shore of the Firth of Clyde is today part of Cowal, it was not necessarily part of the patrimony of the *Cenél nGabhráin*. Rennie (1993, 47, 50) has suggested that pre-existing tribal boundaries, which linked the western shore of the

Firth of Clyde with its eastern shore rather than with the rest of Argyll, may have survived into the 10th and 11th centuries. Thus, the chapel site may have been part of the British kingdom of Strathclyde, centred on *Al Cluith* (Dumbarton Rock), and the religious centre at Govan. With the Clyde functioning as a corridor of communication, the western shore of the Firth would have been within easy reach of these power centres.

In the 12th and 13th centuries, the western shore of the Firth continued to have connections with Renfrewshire and Ayrshire: the marriage of Walter Stewart to Mary, Countess of Menteith, brought the Stewarts, whose estates were in Renfrewshire and Cunningham, lands in Knapdale and Kintyre. Throughout the 12th century the Stewarts expanded into Bute and Cowal, establishing Rothesay Castle as their favourite summer residence, as well as an important fortress.

In 1296 a Stewart was described as '*de Denune*' (of Dunoon) on the Ragman Roll. The castle of Dunoon is first documented in the second quarter of the 13th century, when John '*constabularious de Dunoon*' witnessed a charter with Walter Stewart, and it is uncertain if the Ragman Roll is recording a longstanding arrangement or a relatively new state of affairs (RCAHMS 1992; Rennie 1993, 73). Dunoon was to become a royal castle with the accession of the Stewarts and from the 15th century Campbells served as the hereditary keepers of the castle. As clients of the Stewarts, the Campbells expanded throughout Cowal and Mid Argyll. The other major family within Cowal were the Lamonts, who may have descended from a Dál Riata kindred. In the 13th century a Lamont chief was described as '*Mac Laomain mor Chomhail uile*' — 'Great Ladman's son of all Cowal' (Rennie 1993, 71). It is unknown if this designation includes the western shore of the Clyde, although the fact that a Lamont granted Kilmun Parish Church to Paisley Abbey in 1232 suggests that their influence did stretch to the western shore.

The arrangements and organization of the Church in Cowal are extremely uncertain throughout the medieval period. Small stone chapels with burial grounds are believed to have been built from the 10th century onward (RCAHMS 1992, 6). Small rural chapels with burial grounds are common in Islay and probably date to the 10th century and the Christianization of the Norse population, although their distribution may reflect an even earlier, pre-Norse organization (Henshall 1956, 271–6). Presumably they served small rural communities. These dates correspond roughly to the radiocarbon dates for the burials at Innellan, and it is possible that the now destroyed chapel was contemporary with the burials. Similar or rather more important religious centres in the locality are situated at Ardnadam (Dunoon and Kilmun Parish) and perhaps Kilmun (Dunoon and Kilmun Parish), on the south and north shores of Holy Loch, respectively.

The chapel site at Ardnadam is a multi-phase site with occupation from the Neolithic to the later medieval period (Rennie 1999, 29–43). It lies inside an irregular, probably prehistoric enclosure which served as a burial ground many of the graves were marked by small, upright stones, a few of which were decorated with simple crosses. A small drystone chapel with an altar base was excavated on the site. This chapel probably dates to the 10th or 11th century, although the use of the site as a place of worship may date from the Early Christian period; excavation has uncovered evidence of earlier stone and timber built chapels here (RCAHMS 1992, 48–9; Rennie 1993, 64).

Kilmun Church is the traditional site of the Christian community founded by St Fintan Munnu of Tech Munno in Ireland. However, the first documentary source for Kilmun dates to a charter of 1232 and the earliest material evidence for the site also dates to the late medieval period. Rennie has suggested that Ardnadam was the original site of Munnu's community (Rennie 1993, 64). Other chapel/burial sites in the vicinity of Chapelhall include St Mary's, Toward, immediately to the south (its exact location is not certain and will be discussed in more

depth below) and Kilellan, Toward, which takes the form of an oval enclosure and which was described in the Ordnance Survey Name Book as a chapel and burial ground. The place-name appears as early as 1376 in a Crown charter and the chapel appears to have been dedicated to St Finan.

HISTORICAL AND CARTOGRAPHIC EVIDENCE RELATING TO CHAPELHALL

The old *Statistical Account* provides no information on any of the antiquities in the parish. The *New Statistical Account* (NSA) of the parish is rather more comprehensive in its coverage, but there is still little concrete information on the chapel/burial site at Chapelhall. The minister notes that the parish is not rich in ‘ecclesiastical antiquities’ and that, apart from the parish churches of Dunoon and Kilmun, ‘there was but one chapelry, of which any traces remain. This was dedicated to the Virgin, and situated on the farm of Toward-an-uillt’ (NSA 1845, 601).

The actual site of this chapel is not certain, but no one has so far suggested that it may have been the building noted at Chapelhall by the Ordnance Survey, despite the fact that the chapel/burial site at Chapelhall is less than a mile from Toward-an-uillt. Rennie (1993, 63) has suggested that remains of the Toward-an-uillt chapel and burial ground may lie under the lawn of Tollard House (NGR: NS 116 682). It does seem rather unlikely that St Mary’s is the chapel at Chapelhall, as the minister for Dunoon does not refer to the chapel there; however, the Ordnance Survey Name Book does not mention the chapel now supposedly under the lawn of Tollard House either.

In addition to the mention of St Mary’s Chapel, the NSA (1945, 594) also notes that a number of probable long cists graves or ‘stone coffins’ were found in the parish ‘generally not far from the sea shore: within the space now occupied by the village of Dunoon and Kilmun, and on the lands of Castle Toward and other localities, and where no indications whatever occur of these spots having been dedicated exclusively to the use of ordinary sepulchre, these resting places . . . are to be found to be very numerous’.

The most significant place-names in the vicinity of the chapel/burial site are Chapelton and Chapelhall. Both are recorded in the Ordnance Survey Name Book. Chapelton is described as ‘formerly a farm steading but now annexed to the farm of Innellan — there are the remains of a chapel a short distance from this’, and Chapelhall, ‘a feu held from Mr Campbell of Dunoon, there is a considerable piece of ground attached to the house’ (OS 1864, 101). Rennie (1995, 61) states that the ‘possible significance [of] the “chapel” name was overlooked’.

However, the actual significance of the place-names is not clear. It would seem very likely that the ‘chapel’ prefix is a relatively modern element. More ancient chapel place-names usually have the prefix ‘Kil-’ (Gaelic *cille*, ‘church’ or ‘burial-ground’), usually compounded with a saint’s name. With the numerous Gaelic place-names which describe a church, burial ground or even an abandoned church, the English ‘Chapel’ name must relate to a comparatively recent period and not to the 10th century, when the long cist burials were inhumed.

Various sources were consulted in an attempt to find the earliest use of the Chapelton place name, which preceded the Chapelhall name and originally referred to a fermtoun. These sources included the *Rental Book and Inventory of the Estate of Campbells of Inellan, the Argyll Sasines, the Commons of Argyll, the Commissariat of Argyll*, and the *Inventory of the Lamont Papers* (SRO GD1/172/1; Grant 1902; Lamont 1914; Campbell 1933–4; Mactavish 1935). Of these sources, Chapelton appears only in the *Rental Book and Inventory of the Estate of Campbells of Inellan*, but the earliest mention of the settlement is in 1772 and is simply a reference to a fermtoun; nowhere in the Campbells of Innellan papers is there any reference to a chapel/burial site.

The cartographic evidence is generally uninformative about the chapel/burial site. Pont's map of the late 16th century shows no chapel symbol and no Chapelton name. The first use of Chapelton on a map is on George Langland's *The Map of Argyllshire*, published in 1801. Thus, the map evidence agrees with the general sense that the place name 'Chapelton' is comparatively late.

The first record of a chapel on the site comes from the Ordnance Survey first edition map (OS 1864: Argyll, Sheet CXCIV) and the Ordnance Survey Name Book. The Ordnance Survey map shows a small, rectangular, ruined building within a rectangular enclosure. The relationship between the enclosure and the supposed chapel is not at all certain, but it seems unlikely that it functioned as a boundary to the 10th-century burial ground.

CONCLUSION

The cartographic and documentary evidence yield an inconclusive picture. Apart from the Name Book there is no other reference to a chapel/burial site at Chapelhall. The place-name suggests a site of worship, but the fact that it is an English name suggests that it is a late designation. This is confirmed by the lack of documented use of the name until 1772. It is conceivable that the burials are unrelated to a much later chapel built on the site which gave it its name. The fact that the radiocarbon dates for the burials are late 10th century perhaps supports that conclusion. The alternative solution is that a small rural chapel functioned on the site throughout the medieval period without appearing in any documentary accounts. Although this is plausible, it does not explain the place-name prefix 'chapel'. It may be that the mysterious St Mary's, Toward, was in fact at Chapelhall and at some point underwent a change of name.

GENERAL DISCUSSION

Traditionally, long cist burials have been assumed to date from the Early Christian period, from about the fifth to the eighth or ninth centuries (Henshall 1956). The results of most excavations of long cist burial sites in the recent past have supported this chronological division, with sites such as Catstane (Cowie 1978), Four Winds (Dalland 1992) and Hallow Hill (Proudfoot 1996) all conforming to this pattern. Chronologically, Chapelhall appears to be slightly different, with both dates for the site indicating use in the late 10th century.

Of further interest here is the association between cisted and uncisted burials and the reference to a chapel structure. As Rutherford has noted (see above), the chapel structure at Chapelhall may not have been a primary feature of the cemetery. As Thomas (1971, 50) said of the earliest Christian burial grounds 'these cemeteries, in particular the enclosed ones, antedate any other form of Christian structure in the countryside of post-Roman Britain'. Whether or not this is the case at Chapelhall is unclear, although if it were not the case, at least passing reference in historical documents might be expected. Alcock (1992, 127) has stated that 'no churches or chapels survive above ground in long cist cemeteries, nor have they been found in excavations. The only exceptions are where the main cemetery is late, eighth or ninth century.' It is therefore also possible that the chapel remains observed by the Ordnance Survey may have been contemporary with the cemetery. If so, then the silence of documentary sources with regard to the site may indicate it was a local chapel which went out of use prior to the development of a formal parish system in Cowal in the 12th century.

The primary assessment of the Chapelhall assemblage led to the assertion that two phases of burial were present at the site in terms of 'alignment of burials, associated artefacts and form

of burial' (Atkinson 1994, 5). It was suggested that the duration of the cemetery extended from the early to the later Middle Ages. This has not been confirmed by the radiocarbon assays, although only two dates were pursued for the site, one from long cist burial 004 and the other from uncisted burial 005. Although the dating evidence suggests use of the cemetery in the late 10th century, this may be related to the fact that both burials were from upper horizons within the cemetery, rather than a true reflection of the site's chronology. Multiple stratified burials were noted at the site, particularly in Trench 4, where long cist 034 lay beneath burial 028, which was overlain by burial 027 and possibly superseded by burial 020; this sequence of burials could indicate that the site was used over a longer period of time. The apparent lack of differential phasing among the cisted and uncisted burials is of note in itself and finds a parallel on the Isle of May, where a transition in burial practice and orientation was noted between the eighth and 10th centuries, with cisted and uncisted burials appearing side by side (H James, pers comm). The meaning behind such a transition in burial practice is as yet unclear, but it may imply a social division of some sort or simply a gradual change in attitude toward treatment of the dead.

The association of artefacts with burials at Chapelhall is unusual. The description by Proudfoot (1996, 440) of the traits associated with long cist cemeteries includes a 'lack of grave goods, orientation and large groups of burials, often in rows'; although this is generally accurate, it is not directly applicable to Innellan. Of the nine burials recorded at Chapelhall, artefacts were recovered from at least three and possibly four. The cattle teeth associated with burials 020, 027 and possibly 028 may be residual, although no other animal bones or teeth were noted in the remnant topsoil layer. As Smith has observed (above), cattle teeth associated with long cists and later medieval burials have been noted in the past at Hallow Hill (Proudfoot 1996) and Whithorn (Hill 1997). Given the importance of cattle in Highland society as prestige goods and their role in feasting and marriage agreements (Dodgshon 1998, 91), the Chapelhall cattle teeth may have had symbolic meaning.

The presence of metallurgical waste within cist 004 supports this argument. Although no other examples of the inclusion of waste, blooms or smithing tools are known from long cist cemeteries in Scotland, this artefact came from a relatively secure context. Its recovery from the same level as skeleton 003 in cist 004 and the fact that it appeared deliberately placed, had bonded to the cist side and that the capping slabs had not been disturbed all indicate its deposition at the same time as the burial. Although the hearth bottom may have been fortuitously introduced into the grave during interment and as such may have had no symbolic meaning, Photos-Jones' suggestion that the material may have been a 'loving tribute' from a family member to the deceased may be an equally accurate interpretation of the situation.

The fragmentary nature of the human remains and the low number of burials recorded prevent detailed comparison with other contemporary assemblages. The analysis by Ferrier (1964) of skeletal remains recovered from an adjacent plot in 1964 does offer one interesting comparison. Ferrier states that analysis of the mandible from the burial in the eastern cist showed congenital absence of the third molars, a feature which was replicated in skeleton 002 from the 1994 excavations. While it is tempting to view a familial link between the two burials, this form of congenital abnormality occurs in 20% of modern, white, European populations (Bass 1995, 291). The high proportion of juveniles and young adults among the group is of note. Both sexes were represented, although in only one case could stature be estimated (skeleton 003), and no serious pathological conditions or degenerative joint diseases were noted. Where parallels can be drawn, the skeletal assemblage appears to conform to other analysed groups of burials in Scotland from a similar period, such as the remains recovered from the Isle of May (Roberts & Battley forthcoming).

Geographically, the occurrence of long cist cemeteries is heavily weighted toward the east coast of Scotland, with few sites known along the western seaboard (Proudfoot 1996, 445). Although elements of the long cist burial tradition have been noted in Sutherland (Close-Brooks 1980) and Caithness (Edwards 1926), and a small number of sites are known from the Inner Hebrides, few concentrated groups of long cists have been recognized outside the Lothians, Fife and Angus. Recent work in the Central Highlands has led to the discovery of cisted and uncisted burials associated with an *annat* place-name (the burials are thought to date from the eighth or ninth century) (Atkinson *et al* forthcoming), but this site is the exception rather than the rule. Small clusters of sites are known from south-western Dumfriesshire and around the Firth of Clyde; however, with the exception of Whithorn, few of these sites have attracted more than passing note in the recent past. The Cowal peninsula is a good case in point. Long cists, sometimes described as stone coffins, have been noted at four locations along the eastern seaboard of the peninsula, between Kilmun, Dunoon and Toward, from as early as 1822 (see Rutherford above for further discussion). The description by J C Roger (1857, 251–5) of long cists at Ardyne near Castle Toward, a short distance south of Innellan, is one such record. Although these antiquarian discoveries help to build a picture of the likely distribution of sites, they offer little other useful information.

Why the eastern coast of the Cowal peninsula should be a focus for this form of burial practice is still unclear, given that no major Early Christian ecclesiastical centres are known in the area. The answer may lie in the geographical position of the sites and their association with sea routes up and down the Firth of Clyde. As Proudfoot (1996, 441) has pointed out, ‘although some long cist cemeteries are at remote locations, all were near routes; some were sea routes (especially on the west coast)’. The suggestion by Rennie (1993, 47, 50) that eastern Cowal may have been associated during the 10th and 11th centuries with the kingdom of Strathclyde based at *Al Cluith* (Dumbarton Rock), with its key religious centre at Govan, although attractive, is unlikely considering that *Al Cluith* was sacked in 871 and not reoccupied for several centuries.

CONCLUSION

In terms of the archaeology salvaged, Innellan presented a limited opportunity to investigate an early medieval burial ground, in a sense to catch a glimpse of burial practice and society in the West Highlands during this period. The fact that a number of other burials have been reported from the plot of ground to the south (J Abercromby, pers comm) and were already known from the house plot to the north (Cowal Archaeology Society 1964), together with the Ordnance Survey evidence of a chapel site at the location (OS 1964) and the recovery of sculptured stone heads (Rennie 1995) all suggest that Innellan was a significant ecclesiastical site in early historic Argyll.

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