

Excavations of a medieval cemetery at Skaill House, and a cist in the Bay of Skaill, Sandwick, Orkney

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with contributions by D H Lorimer & J Roberts

ABSTRACT

A medieval cemetery and structural remains were discovered during drainage works at Skaill House, Sandwick, Orkney. Several skeletons were salvaged by the Orkney Islands Archaeologist and later excavations by GUARD revealed further cisted burials. These have been radiocarbon dated to between the 11th and 14th centuries. At the Bay of Skaill the upper half of a cisted burial was salvaged after it had been exposed by the effects of coastal erosion. A radiocarbon date from the bone shows that the burial belongs to the seventh century AD. Structural elements pre-dating the cist were also seen in the eroding cliff-face, and these were probably prehistoric. The excavation and publication were funded by Historic Scotland.

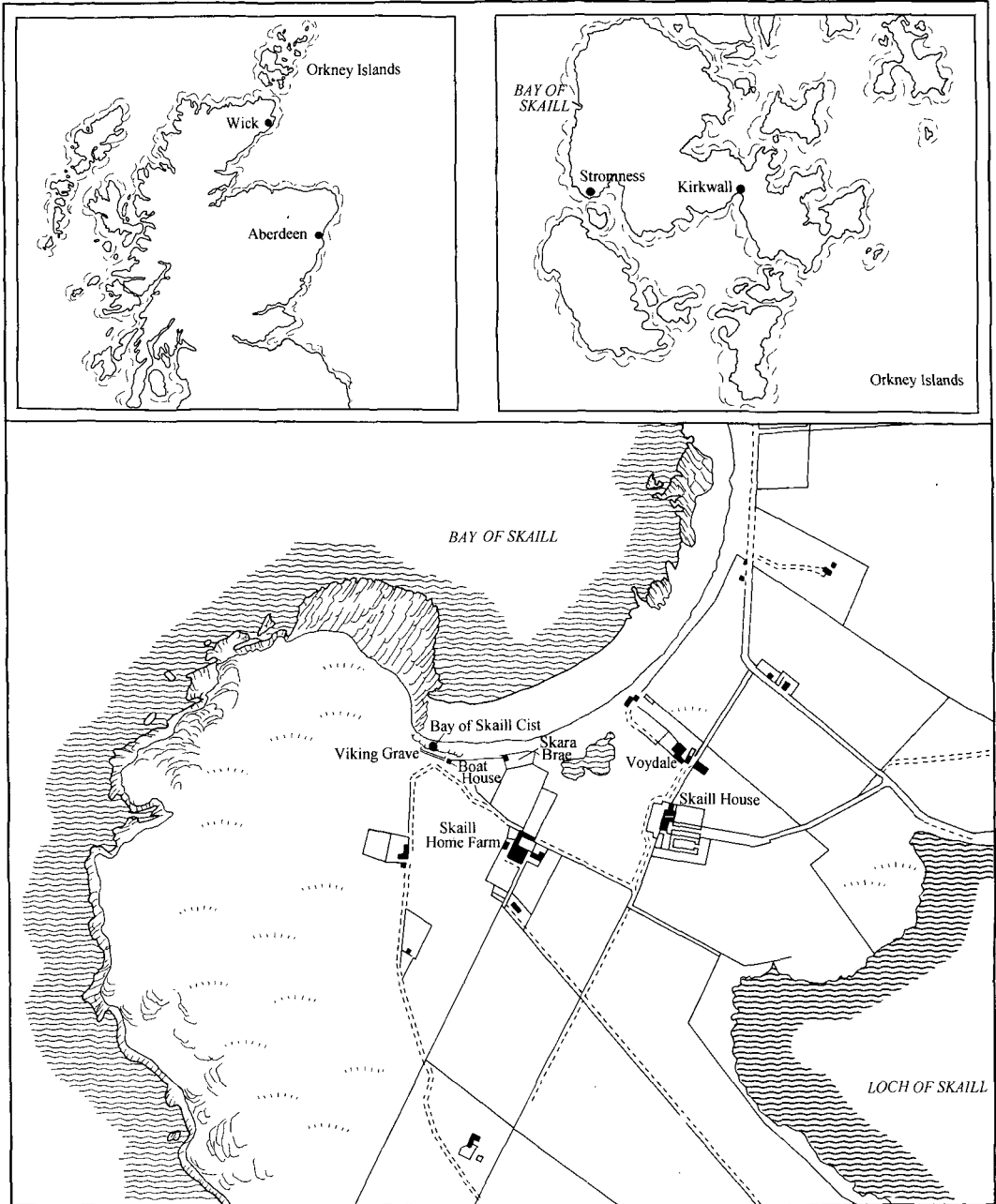
INTRODUCTION

In October 1996, while monitoring the digging of a new drainage and waste water disposal system around Skaill House, Sandwick, Orkney (NGR: HY 2346 1860), Raymond Lamb, Orkney Islands Archaeologist, was alerted to the discovery of human remains within the drainage construction trench. Assisted by Julie Gibson, Historic Scotland Field Warden, he undertook salvage excavations of the skeletons which had been disturbed. The pipe trench was expanded in order to excavate and remove one burial whose skull lay within a stone box.

It was recognized that the remains were unforeseen by the proposals for the drainage works and were potentially important to the understanding of the archaeology of the Bay of Skaill, an area rich in prehistoric and medieval remains, including the renowned prehistoric village of Skara Brae. As Raymond Lamb's office did not have the resources to complete the excavations, Historic Scotland agreed to make funds available for the investigation and recording of further skeletons which were likely to be encountered. In November, Glasgow University Archaeological Research Division (GUARD) was asked to undertake five days' excavation at Skaill House, to incorporate Raymond Lamb's findings and to bring the results to publication.

Both documentary evidence and dated stones incorporated within the building indicate that at least part of the present house at Skaill dates to the later 17th century. There is no record of an early building here, however, and prior to these excavations there was no archaeological record

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ILLUS 1 Site location map (Based on the Ordnance Survey © Crown copyright)

of a cemetery, although local people did know of discoveries of human bone at the site on previous occasions.

While work on the Skail House cemetery was taking place, Historic Scotland also requested excavation of a cist in the Bay of Skail (NGR: HY 2294 1876), which was falling into the sea and

exposing human bone. The cist had been partly excavated by Julie Gibson, in 1994, and the lower part of the skeleton retained in storage.

PART 1: THE CEMETERY AT SKAILL HOUSE

SITE DESCRIPTION (ILLUS 1)

The Bay of Skail is located on the west coast of mainland Orkney. The geology of this area is Middle Old Red Sandstone. Skail House is located about 270 m from the mean high-water mark in the Bay of Skail, which is a wide bay open to the north-west. To the south-west of the house lies the Loch of Skail. The land is low-lying, less than 15 m above sea level, and the surface deposits consist of wind-blown sand.

SALVAGE EXCAVATION BY RAYMOND LAMB (ILLUS 2)

A drainage trench was mechanically excavated using a mini-JCB. This was led from the courtyard of the house around its east and south sides, through a modern (1950s) Gothic arch, and across a Victorian terrace. The trench measured about 0.45 m wide and was up to 2 m deep in places.

Raymond Lamb monitored the digging of the trench to the south-west of the Gothic arch and no archaeological remains were noted. He reported the presence of clean sand with a darker layer of sand, a few centimetres thick, at a depth of 2 m. This was interpreted as an earlier ground surface beneath the made-up ground of the Victorian terrace.

Beneath the arch a drystone wall foundation was seen (not illus). It extended from immediately below the modern surface to a depth of 1.5 m. This walling had been used as a foundation for the wall on the south side of the arch. It was aligned ESE/WNW across the line of the trench, but as it was seen for only a very short distance, it was not clear in what direction it was heading at either end. It was constructed of a mixture of quarried and beach stones. This wall was not seen elsewhere in the trench.

On the south side of the house (Area C) the large paving slabs were lifted and the trench was dug at a distance of between 2.3 m and 2.7 m from the house wall. In this area six skeletons were revealed, none in a cist. Only two of these skeletons were lifted as these had already been disturbed by the JCB.

Skeleton 1 was found at a depth of 0.9 m below the surface. It was oriented and supine with its arms extended down its sides, aligned parallel to the house wall with its head at the west end. A layer of broken shale-like stone was seen around but not immediately beneath the skeleton. No cist or associated structure was seen.

Skeleton 2 A second burial was seen beneath the left arm of the first. As most of this skeleton lay beneath the north section face the bones would not be disturbed by further drainage works and, therefore, were not removed. This skeleton was oriented and supine with arms extended; its head, although not exposed, would have been in the west.

Skeleton 3 lay immediately to the east of Skeleton 1, at the same level, in a supine position.

Skeleton 4 lay beneath Skeleton 3. Because of its depth there was no need to lift it as it was not going to be damaged further by the pipe trench.

Skeleton 5 lay to the east of Skeleton 3 where the clean sand gave way to brown sandy earth. A skull was seen in this area with its head enclosed in a stone box and so the trench was extended to the south to enable this burial to be exposed. There was a clear edge to the brown sand on the south side of the grave showing the edge of the grave-cut. The burial was oriented and supine, and the arms were crossed over the abdomen. The head box consisted of three flat stones, two on either side of the skull and one covering the face. As this skeleton was not going to be further disturbed it was not lifted; however, a long-bone was taken for radiocarbon dating.

Skeleton 6 Only the skull of Skeleton 6 was exposed to the east of Skeleton 5, just inside the extended trench. This skull was left *in situ* because it would not be further disturbed and the trench could not be extended further east because of the proximity of the trench to the house and a garden wall.

The cist was partly exposed in the pipe trench on the east side of the house opposite the porch in Area B. A gap between the cist slabs revealed the ribs of a skeleton. Work on the drain was halted, as it was Lamb's intention that this cist should be fully excavated.

EXCAVATIONS BY GUARD

Following this preliminary work by Lamb and Gibson, GUARD undertook further rescue excavations at Skail House with the following objectives: to ensure that any further skeletons, long cists and any structures on which the pipe trench impinged were recorded adequately, and that the pipe height be adjusted to minimize damage to those left *in situ*; to assimilate the finds and records already made by Raymond Lamb for publication; to leave as many skeletons as possible undisturbed by the work; and, finally, to investigate evidence for the date and cultural associations of the cemetery.

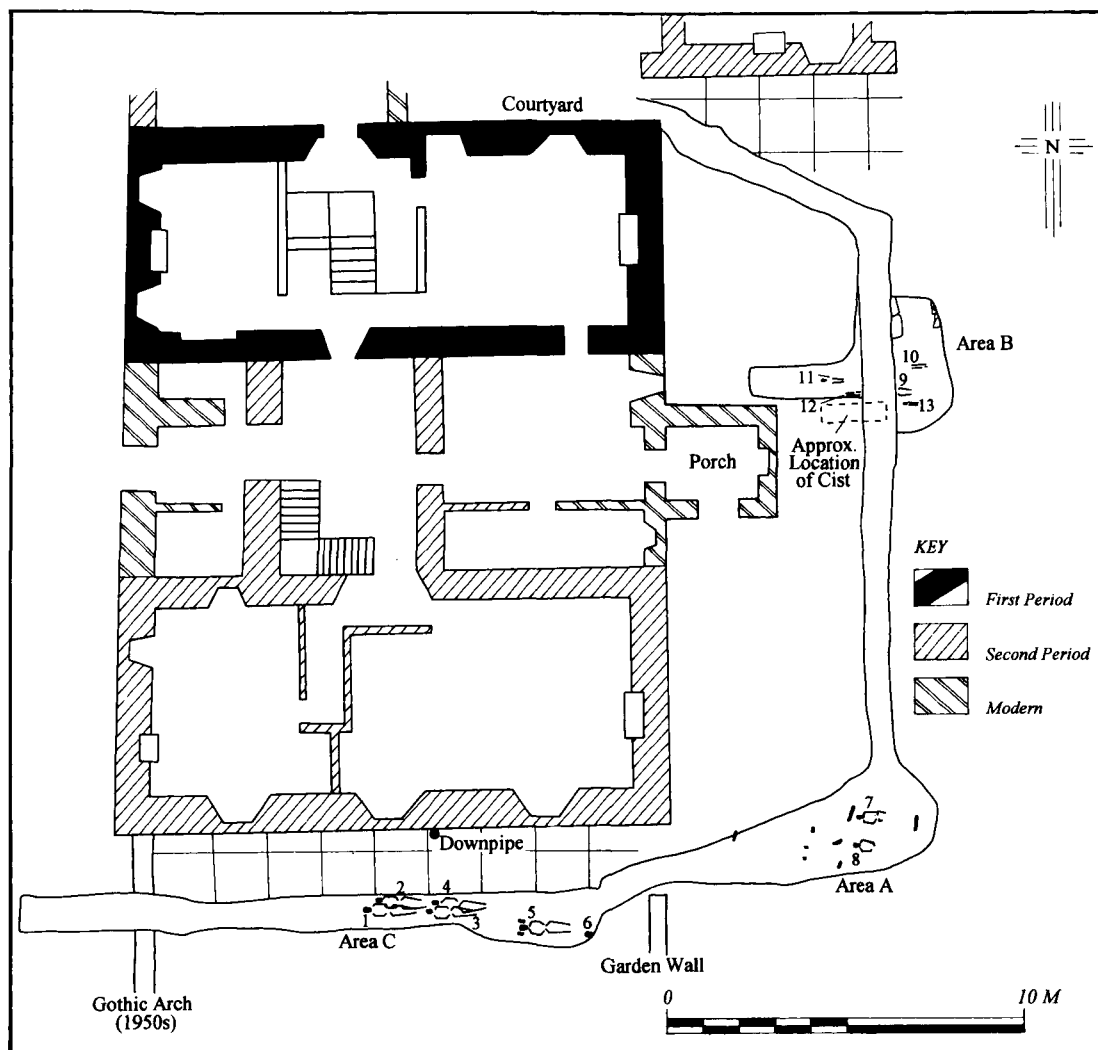
When GUARD's excavation team arrived on site it was found that the pipe had already been laid and the trench backfilled between the modern Gothic arch and the garden wall. Therefore the two areas which were investigated by GUARD — Areas A and B — lay within the remaining or eastern sector of the drainage trench. Area A was extended by a JCB to a depth where upright stones appeared. This area then measured 9 m long and between 1 m and 3 m wide. The trench was shored up and thereafter dug by hand down to a level where flat slabs, overlying graves, were exposed. Area B was 3.5 m long and 1.5 m wide. It was dug by JCB on the east side of the trench with the intention of identifying the cist and excavating it from the side. A small area of trench which was already dug by JCB on the west side of the pipe was later cleaned by hand, exposing an area 1.4 m long and 0.7 m wide.

EXCAVATION RESULTS

Area A (illus 3)

After excavation to the level of the flat cover slabs the exposed section was 1.3 m deep. The upper layer consisted of 0.3 m of gravel and modern made-up ground. Beneath this was a layer of clean wind-blown sand 0.4 m deep which sealed a horizon containing small pebbles, broken slates and some mammal bones. Beneath this was further wind-blown sand, 0.6 m deep.

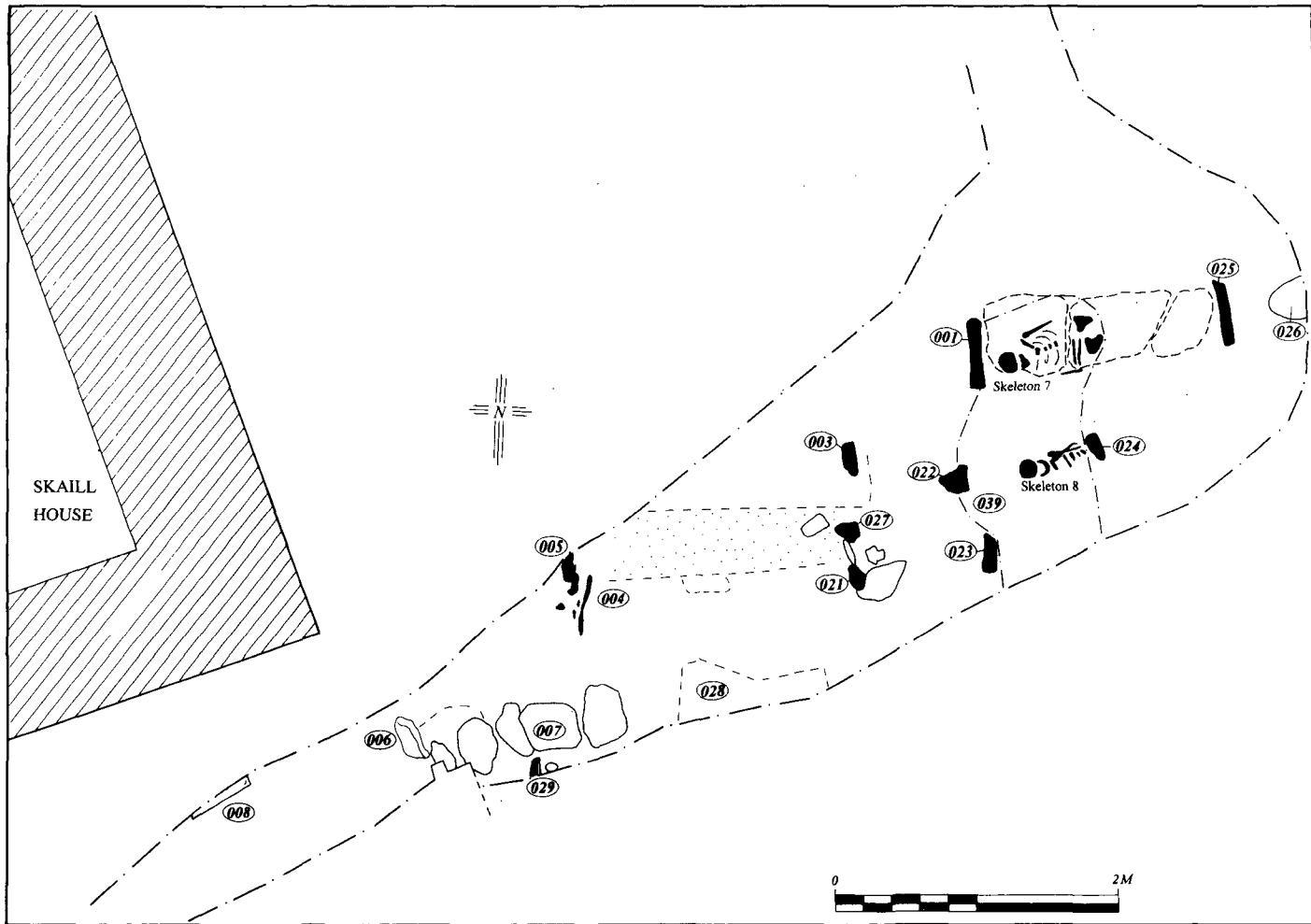
Within the area exposed, 12 upright slabs were seen, two individual flat slabs and two groups of flat slabs, evidently overlying graves. These appeared to form four parallel lines indicating an organized cemetery with graves aligned east/west. The deposit into which these graves were dug was also wind-blown sand, of unknown depth.



ILLUS 2 Plan of Skail House showing its probable development from the 17th century, with locations of the drainage trench and excavated areas

Skeleton 7 lay between two upright slabs forming the head- and foot-stones of a grave which was covered by three large flat slabs. The headstone (001) stood 0.42 m tall above the level of the stones and the foot-stone (025) was 0.3 m tall. The full size of the uprights was not determined as they were embedded in sand and the excavators did not wish to undermine them. The slabs (Stromness flags) were generally sub-rectangular in shape with no visible markings. The grave measured 1.85 m long and the widest cover slab was 0.6 m wide.

When the flat slabs were removed a grave-cut 0.4 m wide, filled with dark brown sand, could be seen against the mid brown sand on either side. The fill of the grave was excavated and, at a depth of 0.4 m, a small, flat, square stone was found. Immediately beneath this was a skull. The skull and shoulder bones were found to be enclosed by a head-box, the sides of which were formed by two stones on the south side and a single stone on the north side. The skeleton was recorded *in situ*. The skeleton was oriented, the head being in the west. It was lying supine in an extended position, with the right arm flexed across the pelvis and the



ILLUS 3 Plan of burials and grave-stones in Area A

left arm semi-flexed, lying beneath the right (ie the arms had been crossed over the abdomen). The skeleton was found to be an adult male over 50 years old who had lost all his top teeth before death. A single long-bone was retrieved for radiocarbon dating. The grave was then backfilled and the flat grave stones replaced.

Grave markers 022 & 024 An irregular-shaped grave marker (022) stood 0.5 m high. There was no evidence for cover slabs or a foot-stone on the surface, but a dark brown sand (039) surrounded the upright stone. Another upright stone (024) was seen at a distance of only 0.9 m to the east of stone 022. These may have been a headstone and foot-stone for a child's burial, though no skeletal remains were recorded.

Skeleton 8 lay within the sand immediately to the east of stone 022, at a depth of 0.4 m, and was evidently an adult. There was no head-box or cist. Because of the difficulty of excavating at such depth and the presence of stone 024, only the top half of the skeleton was uncovered. It was recorded *in situ* and a single bone retrieved for radiocarbon dating. The skeleton was lying on its right-hand side with the head turned to look over the left shoulder. The left arm was loosely flexed across the left side. Fragments of animal bone, possibly sheep cranium, were present in the top of the grave fill.

Grave-stones 006 & 007 A disturbed headstone (006), 0.47 m high, stood at the west end of a group of five flat stones (007) which overlay a sandy grave-fill. The flat stones were about 0.75 m below the surface. The underlying sand was grey-brown in colour with charcoal flecks. There were no clear edges for a grave-cut. As the burial would be protected from disturbance by drainage works by the overlying sand, the grave-stones were replaced without further excavation.

Headstones 004 & 005 Headstone 005 was 0.43 m high. Slightly to the east was a broken slate upright (004) and to the east of this was a grave-cut 0.45 m wide, filled with lighter sand than the surrounding surface. As these features would not be disturbed by continuing drainage works they were allowed to remain unexcavated, but indicate at least that further burials are present.

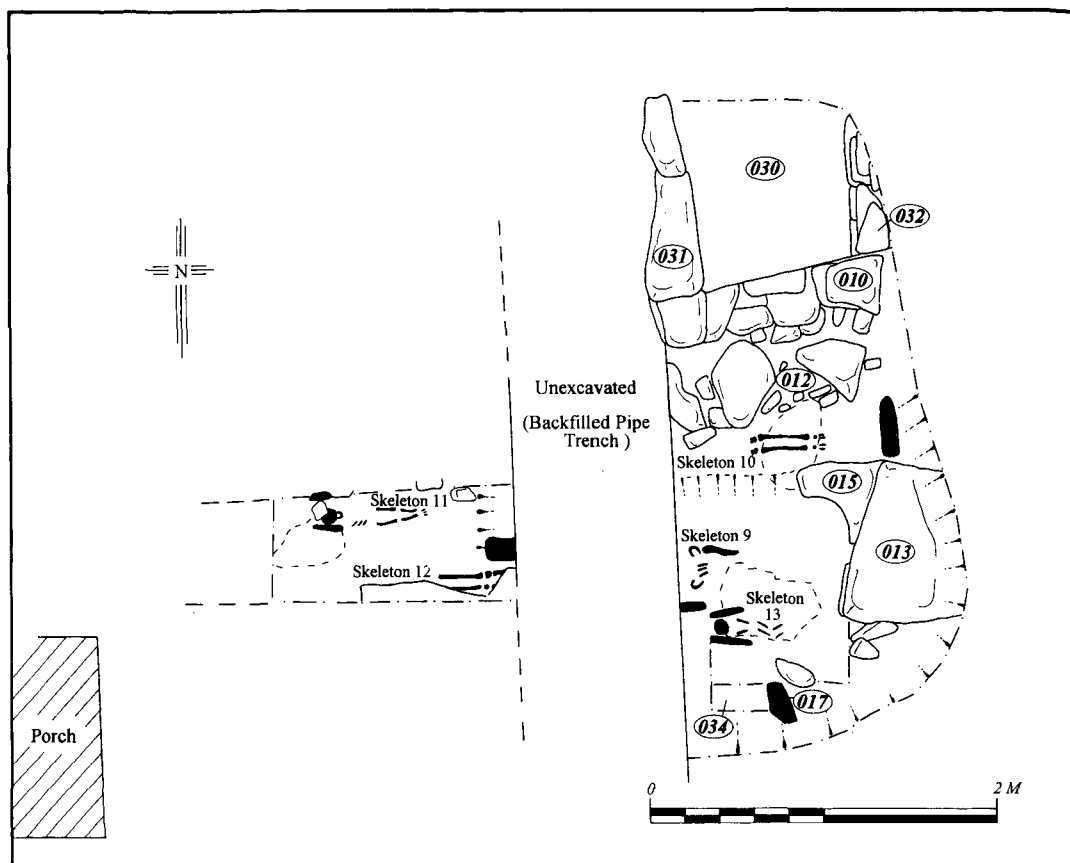
Other headstones were seen within Area A, although the corresponding graves were not excavated. They included a stone seen against the southern section (029), and three irregularly shaped stones (021, 027 & 003) which formed a line perpendicular to the grave for Skeleton 7. Of these, it is possible to suggest that the central stone 027 was a foot-stone for a grave with stone 005 as its headstone. Stone 023 appeared to form part of a row of stones, with 022 and 001.

Flat stones 008 & 026 A large flat stone (008) was seen against the northern section at a depth of 1.8 m below the surface. A rounded slab (026) seen part way up the section at a depth of 0.62 m below the surface may have been in a disturbed position, as it was much higher up than the other flat slabs.

Grave 028 To the east of grave-stones 007, and parallel to the grave-cut marked by stone 005, was a roughly rectangular area of lighter-coloured sand 028. This was recorded in plan but not examined further; it may have been the fill of another grave.

Area B (illus 4)

Area B was located to the east of Skail House, on either side of the backfilled drainage trench. The gravel, tarmac and modern made-up ground was 0.2 m to 0.3 m thick. When this was removed and the trench cleaned, several large flat slabs and three lengths of walling were seen,



ILLUS 4 Plan of burials, grave-stones and (post-medieval?) wall remnants in Area B

overlying a mid grey-brown sand. Further excavation revealed five burials, all lying supine and oriented with heads in the west. Single long-bones were removed for dating and then the skeletons were covered up again as they were not threatened by the drainage works. A further upright slab at least 0.6 m tall (017) was seen in the southern section, but this area was not excavated deep enough to reveal any burial.

On the western side of the backfilled pipe trench the JCB had dug a trench towards the house. This stretch was cleaned by hand in the hope that the cist seen by Raymond Lamb could be located. Beneath the mixed gravel and modern made-up ground was a layer of sand, similar to that which contained the skeletons in the other or eastern part of this area. Beneath the sand were two further skeletons: Skeletons 11 and 12.

Skeleton 019 The disarticulated bones of a child (019; not illus) were found within the grey-brown sand layer, partly underlying the large slabs.

Skeleton 9 comprised the lower half of an adult, exposed close by the pipe trench. A single upright slab was seen in the east-facing section of the cutting and may have been a side slab for this burial.

Skeleton 10 was found to the north of Skeleton 9, beneath the disarticulated child burial (019), and again comprised the lower half of an adult.

Skeleton 11 A child, with its head enclosed by a head-box, was uncovered at the bottom of the trench in the western part of Area B. It was supine, extended and aligned east/west.

Skeleton 12 comprised the lower part of an adult. It was sealed by a large flat slab in the western part of Area B. It lay supine, and was aligned east/west.

Skeleton 13 was a child which had two upright slabs on either side of its head, though there was no cover stone to complete a head-box. The skeleton was lying on its back with both arms loosely flexed across the pelvis and the legs slightly flexed to the right. It was oriented, with the head lying in the west.

Cist There was, unfortunately, no clear evidence for the cist seen earlier despite this attempt to locate it. Its approximate location is shown on *illus 2*.

Walling 010, 031 & 032 Three sections of walling were uncovered within the north end of Area B, forming part of a rectilinear structure. One section (010) was aligned east/west and was seen for a length of 1.4 m. It was constructed of flat slabs and rounded stones, clay bonded, and forming a good face on the north side. Its southern face had been damaged by the JCB. The good face of this wall was seen for a height of 0.71 m, but the foundations were not exposed and so its full height is not known. Shattered slates (012) seen on the southern side of the wall appeared to slope beneath it and in turn sealed the sand which the skeletons (above) lay within. The walling therefore post-dates the burials.

Two slightly diverging walls — 031 and 032 — abutted wall 010. These walls were between 0.80 m and 0.95 m apart and only their inner faces were visible. The western wall (031) was constructed of thin flat slabs with no visible mortar. It contained two possible box drains, one immediately above the other, which appeared to lead towards Skail House. The upper drain was 0.24 m high and 0.27 m wide while the lower one was 0.22 m high and 0.25 m wide. The upper drain was filled with a mixed clay and sand with small slate fragments and a sherd of modern white earthenware. This material differed from the material which generally infilled the area between the walls (030). This was a mixed deposit of sand, broken slate and gravel which also contained post-medieval pottery. The lower drain was empty. The eastern wall (032) was of the same construction as the southern wall (010). It was seen for a depth of 0.7 m, but its footings were not revealed because of the lack of time available and the small size of the trench.

RADIOCARBON DATES

Bone from five of the burials was submitted to the Scottish Universities Research and Reactor Centre (SURRC) for radiocarbon dating. The resulting radiocarbon determinations were calibrated using the University of Washington Quaternary Isotope Radiocarbon Dating Program, 1987.

TABLE 1

Radiocarbon dates

Sample	Lab code	Years BP	$\delta^{13}C\%$	Calibrated dates	
				1 sigma	2 sigma
Skeleton 1	GU-7244	790 ± 70	-17.7	AD 1182–1275	AD 1043–1290
Skeleton 5	GU-7241	700 ± 70	-19.7	AD 1267–1290	AD 1242–1389
Skeleton 7	GU-7242	820 ± 60	-20.1	AD 1166–1265	AD 1040–1280
Skeleton 8	GU-7240	750 ± 70	-23.8	AD 1225–1283	AD 1160–1384
Skeleton 10	GU-7243	710 ± 60	-19.5	AD 1262–1290	AD 1220–1392

Radiocarbon dates show that the cemetery was in use sometime between the mid 11th and late 14th centuries, but it is not possible to suggest from these dates which area of the cemetery was in use first or where the focus of the cemetery may have been.

HUMAN BONES

BONES EXPOSED IN TRENCH C

Daphne Home Lorimer

Skeletons 1 and 3 from the Skaill House cemetery were retrieved from the spoil excavated by JCB from the drainage trench. The bones of Skeleton 1 appeared to be those of one individual. The skull of Skeleton 3, however, does not belong to the post-cranial skeleton retrieved with it and has been labelled 3a (the remainder of the bones being 3b). A number of bones were also collected from the spoil at a later date. These have been inventoried and, where broken fragments made a perfect fit or articulation, have been included with the appropriate skeleton.

Methodology

The criteria used for sexing were those given by Bass (1987) or Krogman & Iscan (1986), but, where possible, age was determined from wear to the symphysis pubis using the method described by Brooks & Suchey (1990), but the degree of dental attrition (Brothwell 1981) was also used. Grey's *Anatomy* (1977 edn) and Bass (1987) were used for general anatomy and Ortner & Putschar (1985) and Resnick & Niwayama (1988) for general pathology.

A full inventory of all skeletal parts will be deposited with the archive of the project records at the National Monuments Record of Scotland (RCAHMS) in Edinburgh.

Results

Skeleton 1 appeared to be that of an adult female, aged between 35–40 years, from the presence of osteophytic lipping on the vertebrae and the exostoses in the hypertrochanteric fossa. She was about 152 cm (5 ft) in height. Slight osteophytic lipping was noted on ribs and the lumbar vertebrae, where there was also evidence of a disc lesion. Cranial indices (see archived Inventory) indicated that the skull was brachycranial and low in height; the face and palate were broad, but the nasal aperture was narrow. In the post-cranial skeleton, there was antero-posterior flattening of the upper end of the femur. Although rare today, this condition (platymeria) was relatively common among earlier populations. Its cause is uncertain and has been variously ascribed to squatting and to extra strain on the femur during childhood, but is now considered to be of dietary significance — the lack of calcium causing the bone to take up a flattened shape to compensate for the lack of sufficient bone material for muscle attachment (Buxton 1938). There was, however, no latero-medial flattening of the tibia.

Thirteen teeth were missing *post mortem*, but there were no caries present in the extant teeth. The lower right second molar was lost *ante mortem*. The socket was enlarged and smooth indicating the previous presence of a root abscess. The corresponding second molar of the upper dentition showed very little wear (only slight polishing of the enamel) so the abscess had probably been of long standing and been responsible for the jaw on the right side to have been favoured during mastication.

X-rays showed the four third molars to be congenitally missing. Hypodontia of the third molar is relatively common and is thought to be 'primarily determined by genetic factors with a fairly high degree of penetrance' (Graham 1956). Since it is the size of the tooth which is inherited, the tooth can sometimes be seen as a small peg, but if the tooth-germ is too small, the tooth never develops (Brothwell *et al* 1963). Both

upper left adult canines were unerupted. The right permanent canine appeared about to erupt, but the socket for the deciduous tooth on the left side was still present. The deciduous tooth must have remained *in situ* beyond the norm and, in fact, X-rays showed the permanent tooth to be lying, unerupted, at an angle across the palate.

Skeleton 3a was represented by the skull, only. This was fragmented and parts were missing. Partial reconstruction was attempted, but no cranial measurements were possible. The individual was that of a woman of about 45 years (Brothwell 1981), but her height was not known. Only 15 of the possible 30 non-metrical variations given by Berry & Berry (1967) could be recorded (see archived Inventory).

Pathological conditions were found on the teeth but not on the skull. The right alveolar margin was missing and all the incisors had been lost *post mortem*. Both lower first molars were very worn and while caries was found on the right side, an abscess on the left had broken through the alveolar margin. The upper right first molar had been lost *ante mortem* with considerable remodelling of the alveolar margin. There were, however, indications that an abscess had been present.

Skeleton 3b was that of an adult male, about 173 cm (5 ft 8 in) in height. The age is unknown. The bones are robust and the diameters of the articular surfaces all lay within the male range. The right femur showed slight antero-posterior bowing (pilasterism) and the linea aspera was very pronounced. Platymeria was present in the right femur, but the left femur was missing. Platycnemia of the tibia was not present on either side.

Skeleton 5 The tibia retrieved from the 'head-box' burial for radiocarbon dating appeared, from a discriminant function analysis (Bass 1987), to be that of an adult female (age unknown) of about 157 cm (5 ft 2 in) in height. Both medial and lateral squatting facets were present, but no pathological conditions were seen.

SKELTAL REMAINS FROM TRENCHES A AND B

Julie Roberts

These skeletal remains fell into two categories: articulated skeletons which were analysed *in situ* in the ground and subsequently re-buried, and disarticulated remains from a variety of contexts within the pipe trench. The state of preservation of the bone from both the articulated and disarticulated burials was extremely good. There was no surface erosion of the cortex and fragmentation of the bones was minimal. This was probably due to the fact that they were buried in well-drained sand, often at a substantial depth. There had been some disturbance of the skeletons by later burials, animals and most recently by mechanical excavator.

Methodology

Stages of dental development and epiphyseal fusion (Ubelaker 1989; Buikstra & Ubelaker 1994) were used to determine the ages at death of the juvenile and young adult skeletons. Where epiphyseal fusion was complete (in those aged c 25 years or more), age at death was based on the appearance of the pubic symphyses (Brooks & Suchey 1990), the auricular surfaces of the ilium (Lovejoy *et al* 1985), the sternal ends of the ribs (Iscan *et al* 1985) and, where no other method was possible, ectocranial suture closure (Ubelaker 1989). The use of molar attrition as a guide to age at death of the adults was avoided, in view of the dental pathology present.

As the majority of disarticulated remains were juvenile, it was possible to employ the most accurate methods of estimating age at death, ie dental development and epiphyseal fusion

(Ubelaker 1989; Buikstra & Ubelaker 1994). The lengths of long-bones were used only as a guide (Bass 1987), as these are dependent to an extent on health and nutritional status, and may be variable both within and between populations. The few adults identified amongst the disarticulated remains, without exception, were represented by only one or two skeletal elements, therefore precise ages could not be established.

Morphological differences between the male and female pelvis and cranium were used to determine the sex of the articulated individuals (Phenice 1969; Krogman & Iscan 1986; Buikstra & Ubelaker 1994). This was supplemented with metric data, which included measurements of the head of femur, humerus and radius, and bicondylar and epicondylar widths of the distal femur and the humerus (Krogman & Iscan 1986; Chamberlain 1994). Estimation of the stature of the individuals was calculated by measuring the lengths of any intact long-bones which were present, with preference being given to the femur and tibia combined, and applying these to pre-calculated formulae (Trotter 1970). As yet there is no way of determining accurately the sex of juveniles without the aid of biomolecular analysis (Buikstra & Ubelaker 1994). Of the disarticulated remains, none of the few adult skeletal elements present was diagnostic of sex.

The articulated skeletons were analysed in the ground. The constraints of time, space and poor weather conditions meant that a full palaeopathological assessment could not be made. Although the exposed long-bones and the dentition were closely examined, it was not possible, for example, to lift and examine all the vertebrae for evidence of degenerative joint disease. For the same reasons, detailed observation of non-metric traits was not possible. Where pathology was identified, it was classified according to cause (Roberts & Manchester 1997; Ortner & Putschar 1981; Rogers & Waldron 1989). The robusticity of the bones was assessed and prominent muscle insertions which might have been related to occupation were recorded (Kennedy 1989).

Those disarticulated remains which were lifted during excavation were thoroughly examined for evidence of pathology, which was classified, again, according to cause.

The presence of any non-metric traits, as identified by Berry & Berry (1967) and Finnegan (1978), was recorded in the articulated individuals. It is possible that any traits observed on the foetal/infant remains are likely to have been genetically rather than occupationally or environmentally determined; however, there is evidence to suggest that some of these traits may be age related (Saunders 1989; M Bruce, pers comm, 1997).

For the disarticulated remains the minimum number of individuals (MNI) present in each deposit was estimated by recording any repeated skeletal elements and, in the case of juveniles, by identifying elements which were at different stages of growth and development.

Results

Skeleton 7 was undisturbed and in a good state of preservation. All the bones were intact and in full articulation. The cranial and pelvic morphology and post-cranial measurements of the skeleton all indicated that the skeleton was male. A stature of 165.5 cm (5 ft 5 in) was estimated, based on the lengths of the tibia and femur combined. An age at death of 30–40 years was determined. It was not possible to include dental attrition as a means of estimating age, due to the unusual dental pathology.

The most striking feature of this skeleton was the *ante mortem* loss of all the maxillary teeth (AMTL) and subsequent extensive resorption of the upper jaw. The mandibular teeth were heavily worn. This situation must have occurred prior to the loss of the maxillary teeth, unless the individual had habitually chewed against a surface held between the upper gums and lower teeth. The cause of the tooth loss is unknown, but it is unlikely to have been due to caries as all the mandibular teeth were in good condition,

apart from some calculus and heavy attrition. It is possible that disease of the alveolar bone of the maxilla may have been the cause of tooth loss or even that they had been extracted deliberately.

Skeleton 8 Those bones which were uncovered were intact, in full articulation and in a good state of preservation. The left humerus was removed for radiocarbon dating and for closer study of the pathology. The morphology of the skull and the diameter of the head of humerus indicated that this skeleton was female. A stature could not be ascertained as the only accessible long-bone was a left humerus which had been shortened considerably by a healed fracture of the mid shaft. The fused sternal end of the clavicle indicated that this individual was over 28 years of age at death. The appearance of the sternal ends of the ribs and the cranial sutures suggested an age of 50–60 years. Again it was not possible to use dental attrition as a means of determining age, as this skeleton suffered from the same dental condition as Skeleton 7.

As with Skeleton 7, all the teeth in the upper jaw had been lost *ante mortem* and extensive remodelling of the maxilla had occurred. Of the mandibular teeth, only the left and right pre-molars and the left canine were *in situ*. All of these teeth were heavily worn and covered in calculus. The second pre-molar on the right side was almost entirely rotted away by a large carious lesion and the first pre-molar on the same side had a smaller carious lesion at the root/crown margin. Two loose mandibular teeth were found in the grave fill, both had sclerosis of the apex of the roots, sub- and supra-gingival calculus, and one was partly destroyed by a large carious lesion. The absence of maxillary teeth and the similar gross resorption of the upper jaw suggests perhaps that Skeletons 7 and 8 had been the victims of some cultural practice where the teeth were deliberately removed. This seems more likely in the case of Skeleton 8, where the mandibular teeth were healthy.

This skeleton also had a severe, spiral fracture of the mid shaft of the left humerus, a type more usually caused by an indirect twisting force, rather than direct violence (Crawford-Adams 1987). The fracture was well healed with extensive remodelling, but badly aligned, causing the distal half of the bone to deviate medially at an angle of approximately 40 degrees. The substantial overlap of bone caused by the contraction of the muscles around the fracture site and poor immobilization during healing had caused the arm to be shortened by approximately 50 mm. In addition there was osteoarthritis of the head of the humerus, characterized by gross porosity of the joint surface, osteophytes around the posterior and medial joint margin and alteration of the contour of the joint surface as a whole. This was probably a direct consequence of the fracture, which would have altered the normal alignment of stress through the joint. Both the extent of the remodelling and the severity of the osteoarthritis are indications that this individual lived for quite some time after sustaining the fracture, and still retained some use of the arm.

Skeleton 9 Only the pelvis, femora and proximal ends of the tibiae were exposed. The bone was well preserved. Two additional fragments of disarticulated bone from other individuals were present in the grave-fill: part of the femur of a neonate resting on the left femur of the adult, and the complete scapula from a baby of the same size, lying by the left knee. The pelvis was undoubtedly female in morphology, and the diameter of the left head of femur supported this conclusion. The length of the femur indicated a stature of 160 cm (5 ft 3 in). The first and second sacral vertebrae were well fused indicating an age of above 25–28 years; and the appearance of the auricular surfaces and pubic symphyses of the pelvis suggested an age at death of 30–40 years.

Skeleton 10 was represented by the tibiae only. These were extended in an east/west direction, parallel to Skeleton 9. The bones were in a good state of preservation. The left tibia (which was removed for radiocarbon dating) measured 380 mm, which would give a stature of 172 cm (5 ft 8 in) if the individual were female and 174 cm (5 ft 9 in) if it were male. Although it was not possible to assign a definite sex to the skeleton based on the tibia alone, the stature and the general robusticity of the bone suggested that it was probably male. The proximal and distal epiphyses of the tibiae were fused, indicating an age of above 16–20 years. The joint surfaces were smooth with no evidence of degenerative change, suggesting that the individual was not elderly. A shallow transverse cut mark, measuring about 13 mm, was found on the

medial/anterior aspect of the mid-shaft. The edges of the cut were remodelled and there was no associated periostitis, indicating that this was not a serious injury.

Skeleton 11 was complete and fully articulated. The bones were in a good state of preservation with no surface erosion. The metopic suture had recently fused indicating an age of c 18–30 months. All the deciduous anterior teeth had erupted and were *in situ*. Deciduous M1 and M2 were also present, but the roots of M2 were not fully developed, indicating an age of 16–32 months.

Skeleton 12 was represented only by a pair of articulated feet, which were excavated immediately to the west of the pipe in Trench B. The bones belonged to an adult of unknown sex. No pathology was identified.

Skeleton 13 was in a good state of preservation, complete and fully articulated; it was possible to expose the whole body. The fontanels of the cranium were still open and the metopic suture was approximately 50% fused, indicating an age of less than one to two years. All the deciduous anterior teeth and M1 had erupted, but M2 had not, confirming an age of less than 18 months. The mandibular symphysis had fused, but the vertebral arches had not fused in the mid-line, indicating an age at death of between nine and 12 months.

Disarticulated remains Disturbed human bone was recovered from grave-fills, associated sandy layers and from the overlying dumped soils and building debris forming a ‘made-up’ ground around Skail House. At least 16 individuals were represented, both male and female, and ranging in age from pre-natal/neonatal to adult. Table 2 includes calculations of the age at death of each individual and any pathologies which were observed.

Discussion

From Table 2 it can be seen that a minimum number of 27 individuals were identified; 12 adults and 15 juveniles. The ratio of juveniles to adults does appear to be high, even when compared to ‘typical’ patterns observed in pre-industrial or developing modern societies where immature individuals often account for up to half of the cemetery population (Miles 1989; Ubelaker 1989). There are, however, many problems associated with the study of palaeodemography (Ubelaker 1989; Chamberlain 1994; Roberts & Manchester 1997) which in this instance are compounded by the potential problem of sample bias. Only a small part of what may have been a large cemetery at Skail House was excavated and the high frequency of infant burials observed in one particular area may not be representative of the cemetery as a whole.

Analysis of the age structure of the sub-adult sample revealed that 66.6% (n = 10) of individuals were younger than 12 months, 26.6% (n = 4) were between one and three years, and 6.6% (n = 1) were aged between one and five years. The 10 infants aged below 12 months included several aged six months or younger. This relatively high infant mortality rate in the first few months of life reflects a common situation in pre-industrial societies, and findings at Skail House compare with the findings from Ensay where approximately 60% of all the juveniles were aged less than 12 months at death, the majority being neonates/full-term foetuses (Miles 1989). However, the problem of sample bias at Skail House must again be considered.

There were differences in the distribution of adults and sub-adults within the excavated areas of the cemetery. With the exception of a single thoracic vertebra belonging to an infant of less than 12, all the burials found to the south of the house in Trench A were adult. In contrast, Trench B, situated outside the eastern face of the house, contained a mixture of adults and

TABLE 2
Summary of skeletal remains from all areas

Articulated remains

Skeleton	Sex	Age	Stature	Pathology
1	female	35–40 years	152 cm	osteophytic lipping, cortical defect
3a	female	c 45 years	–	abscess
3b	male	adult	152 cm	osteolysis
5	female	adult	157 cm	–
7	male	30–40 years	165.5 cm	AMTL
8	female	50–60 years	–	AMTL, caries, fractured humerus
9	female	30–40 years	160 cm	–
10	male?	adult	174 cm	cut mark
11	unknown	16–32 months	–	–
12	unknown	adult	–	–
13	unknown	9–12 months	–	–

Disarticulated remains

Context	Sex	Age at death	Stature	Pathology
A	–	< 12 months	–	–
A	–	adult	–	–
A	–	adult	–	–
B	–	< 12 months	–	–
B	–	0–3 months	–	–
B	–	12–24 months	–	colles fracture
B	–	12–36 months	–	–
B	–	1–5 years	–	–
B	–	3–6 months	–	–
B	–	3–9 months	–	periostitis
B	–	9–12 months	–	–
B	–	adult	–	DAS
B	–	birth ± 2 months	–	–
B	–	c 18 months	–	cribra orbitalia
B	–	c 6 months	–	periostitis
B	–	foetus, 5–6 months	–	–

Abbreviations: AMTL = *ante mortem* tooth loss
DAS = defect of the articular surface

immature individuals, although the adults here were outnumbered by almost 3:1. A foetus and two neonates in Trench B were not in any obvious association with adult remains, perhaps indicating that they had been given formal burials in their own right. They were, however, all disarticulated and disturbed and may even have been moved from their original place of burial. Both sexes were found in both parts of the cemetery.

The health status of the individuals was generally good and there was only one example of infectious disease observed, in a six-month old infant. Periosteal new bone growth on the inner surfaces of three lower ribs probably represents a chest infection which was active at the time of death; iron deficiency anaemia was also present and was perhaps associated with this. Infectious illnesses were a common cause of death in children prior to the advent of antibiotics, and the low prevalence of this type of disease amongst the sub-adults at Skail House probably means that any infectious diseases which did occur were acute, aggressive and generally caused death before skeletal manifestations had time to develop.

Examples of traumatic injury included a superficial cut to the lower leg of Skeleton 10, a healed colles fracture in disturbed infant bones, and a severe spiral fracture of the humerus of Skeleton 8. None of these injuries needs necessarily to be attributed to inter-personal violence.

Fractures of the humerus can be difficult to immobilize and may be complicated by the problem of non-union or nerve damage affecting the lower arm. The extent of healing and evidence that some function of the arm was retained suggests that despite the subsequent deformity, this woman did receive some form of medical or nursing care.

The *ante mortem* tooth loss observed in Skeletons 7 and 8 is interesting, particularly in the case of Skeleton 8 where all the mandibular teeth were still *in situ*. The complete and extensive alveolar resorption of the maxilla suggests that tooth loss occurred several years before death and therefore may not have been age related. Alternative interpretations include a cultural practice involving deliberate removal of all the maxillary teeth, or a pathological condition which affected only the upper jaw. Examining the dentition of more skeletons from the cemetery might have provided some clues as to which (if either) of these explanations is correct.

It was possible to estimate the stature of several of the articulated individuals, though there was some disparity between the range recorded by the writer — from 160 cm (female) to 165.5 cm (male) and 174 cm (male?) — and that recorded by D Lorimer (above) — from 152 cm (one male, one female) to 157 cm (male). The average British male height in the medieval period is cited as 171.8 cm (Roberts & Manchester 1997). No figures for female stature are given by Roberts & Manchester, but the height of 160 cm recorded above is comparable to the average stature of 159.5 cm observed in the female burials from a medieval cemetery on the Isle of May, off Fife (Roberts & Battley 1997), and the stature of 161 cm of an early medieval female from Chapelhall, Inellan, Argyll (Roberts 1997).

ANIMAL BONES

Julie Roberts

The following is a summary of a more detailed report on the animal bones from Skaill which will be deposited with the archive of the project records at the National Monuments Record of Scotland (RCAHMS) in Edinburgh.

A total of 45 bones or bone fragments were collected. Species and, where possible, age, were determined with the assistance of a reference collection and texts by Rackham (1994), Davies (1987), and Hillson (1996). The bone derived from 10 contexts: one unstratified or disturbed context, three grave-fills, and six layers of sand or slate. Species identified included cow, pig and sheep, as well as unidentified bird. All of the remains were disarticulated with the exception of the arthritic forelimb of a sheep (distal humerus and proximal radius and ulna). Elements represented were predominantly limb bones and vertebrae. A cow scapula had marks on the distal end of the blade which may have been caused either by gnawing or as a result of the blade being used as a scoop. It is difficult to tell which, due to overlying surface erosion.

ARTEFACTS

Three potsherds were retrieved from the excavations. The earliest pottery was a sherd of post-medieval reduced earthenware, of 17th/18th-century date. There was a sherd of slip-lined red earthenware of 19th-century date and a sherd of white earthenware, glazed, of 19th/20th-century date. Four iron nails were also retrieved. All of the finds came from superficial or disturbed contexts — dumps of made ground or fills within the walled structure in Area B.

DISCUSSION

THE CEMETERY

The excavations at Skail House have revealed a cemetery dating to a period between the mid 11th and later 14th century, with graves lying at a depth of between 0.9–1.3 m beneath an inundation of wind-blown sand.

A total of 12 adults and 15 infants and juveniles were identified. The high proportion of infant and juvenile bones exceeds even the high infant mortality rate commonly attributed to pre-industrial societies. All of the infant and juvenile bones are from Area B except for a single infant bone found in wind-blown sand in Area A. Some zoning of the cemetery according to age is indicated, therefore, although as Area B also contained adults it was not used exclusively for children's burials.

Extended inhumations were marked by simple upright slabs. The graves were all oriented, with heads lying in the west, and were unaccompanied by grave goods. The burial method consisted predominantly of dug graves with simple headstones. Two burials also had a number of flat cover slabs. As the excavation was limited in scope and did not include the investigation of all the headstones it is not possible to say how many burials are represented by the 12 upright stones recorded and some of these may in fact be foot-stones.

While none of the excavated burials was contained within a cist, there were some upright slabs aligned east/west in Area B which may have been cist side slabs. (One cist was identified in Area B by Raymond Lamb, but it was not possible to examine this further during GUARD's investigation.) The heads of four of the burials were enclosed by 'head-boxes', two for children (Skeletons 11 & 13), one for an adult female (Skeleton 5) and one for an adult male (Skeleton 7). Thus there was evidently no special association of this arrangement with a particular age or sex. These head-boxes are similar to the 'head-sets' recorded at the cemetery at Balblair, Ross & Cromarty (Reed 1995). Here, the cemetery contained several dug graves with upright stones to either side of the skull and two burials were radiocarbon dated to the 11th or 12th centuries. At Kirkhill, St Andrews, one of the many 'flanked skull graves' was dated to AD 661–778 (cited in Reed 1995, 789). Reed (*ibid*) has suggested that the use of stones flanking the skull was an enduring burial tradition in early medieval eastern Scotland, perhaps used for lower-status Christian burials which mimicked lintel graves, such as those found at Hallow Hill, Fife (Proudfoot 1996).

Initially the cemetery was well laid out, with the graves lying in rows, though there was some evidence for later graves immediately overlying earlier ones in all three areas. Also, there appeared to be a slight difference in the alignments of the burials of Areas B and C, which were aligned with the walls of Skail House, and Area A, where they lay closer to NW/SE. The radiocarbon dates do not suggest that either group is earlier.

There is little evidence regarding the extent of the cemetery. To the south, when a sunken garden was built in the early 1900s, human bones were found and reburied nearby. In the 1950s replacement of the flagstones in the entrance to Skail House also revealed human bones (R Lamb, *pers comm*). The drystone wall foundation discovered by Raymond Lamb to the west of the modern Gothic arch may define the south-western edge of the cemetery, as no burials were seen in the trench beyond this. In the north, in Area B, burials were disturbed by the insertion of a post-medieval walled structure but probably do extend beyond this. Within these keyhole trenches, therefore, it can be seen that the cemetery extends for at least 30 m north/south and 25 m east/west.

There is no local memory of the existence of this cemetery. This can probably be explained by the deep deposit of sterile sand which blew ashore since the cemetery went out of use, but also perhaps by the reluctance of local people to advertise the presence of human bones when these are discovered by chance. The inundation of wind-blown sand covered the burials in Areas A and C to a depth of c 0.6 m. In the north, in Area B, the burials were closer to the surface and here the sand was only 0.3 m deep. This suggests that the old ground surface sloped upwards towards the north, perhaps forming a mound which was subsequently levelled off for building purposes.

SKAILL HOUSE AND POST-MEDIEVAL WALL REMNANTS

There may have been a house on this spot early in the 17th century. A deed, dated 1628, was signed at 'Bishop Graham's House of Skail' (RCAHMS 1946, 251). An armorial panel set into the modern porch has the initials of George Graham (Bishop of Orkney 1615–38) but this is known to have been moved from Breckness House, which was built in 1633. The oldest part of the present house is the north wing, thought to date from the time of Bishop Henry Graham of Breckness, who built or enlarged Skail in the late 17th century (*ibid*). A stone lintel dated 1676 is thought to date this remodelling. A sundial in the courtyard is dated 1668, but of course this need not be its original position as sundials are easily moved. The south wing and courtyard are thought to be of 18th/19th-century and later construction (*illus* 2).

Remnants of a post-medieval structure were recorded within Trench B. Unfortunately, this walling was not fully exposed to foundation level and its relationship to the cemetery or to the present Skail House was not fully explored in the time available. However, it could be seen that the walls formed three inner faces of a structure which contained a double box-drain, and which probably post-dated both the cemetery and the wind-blown sand. Modern pottery was present in the material infilling the space between the walls and also the drain fill. Given the likely history of Skail House, it is possible that the wall remnants belong to an early 17th-century structure, perhaps an outhouse, which was levelled and infilled during later alterations to the house.

ORIGINS OF SKAILL

While nothing from these excavations dates from the Norse period it is still worth considering the place-name in these terms and asking why there was a cemetery here between the 11th and 14th centuries. The importance of the name has been discussed by Marwick (1952), Thompson (1987; 1995) and Lamb (1997). In Orkney, 'skail' sites are clearly of high status, as seen at Skail (Deerness) and Langskail (Gairsay). Thompson (1987, 33) suggests that Orkney skails were places of public congregation, perhaps for communal feasting or pagan worship (though he also points out that the interpretation of 'skail' is controversial as the Norse *skali* was used in the Nordic world to refer both to the site of a low-status 'hut' and a high-status 'hall'). This theme is enlarged upon by Lamb (1997, 15) who suggests a connection in the saga texts between skails and 'entertainment', and also their use in the collection of taxes. Some skail sites are also closely associated with parish church sites, as at Deerness and Rousay. This suggests that the skail sites were still flourishing when the parishes were established, probably in the 13th century. There is the potential, therefore, for discovery of a Norse timber-built hall or meeting place in the vicinity of Skail House and perhaps future excavations beneath the wind-blown sand will reveal elements of a Norse landscape.

The site is located in the north of the bay near the site known as Castle of Snusgar. Remains of this were visible until the 18th century and Marwick (1952, 155) suggested that it could have

become the base for the local chieftain in the 11th century. The impressive Skail Viking hoard, found in 1858 and dated no earlier than the 10th century, suggests the presence in the vicinity of a wealthy individual or group (Morris *et al* 1985). This tempts support for the proposal that the Castle of Snusgar was Norse.

It has previously been suggested that a Christian chapel could have been located close to Skail House (Clouston 1918, 100) or beneath the parish church of St Peter, further around the bay (Fraser 1924, 27). The present-day church of St Peter was built in 1836 on the site of its predecessor, built in 1670. There are known to be undated, unenclosed burials, ancient wall remnants and midden deposits in the immediate vicinity of the church (NMRS HY 21 NW No 23). Perhaps the original St Peter's church was located near a Norse 'skali', in the vicinity of Skail House, with a cemetery extending around it. The church was possibly moved further north around the bay, to its present location, when the site became inundated with sand in the later medieval period.

In the interests of their better conservation or protection, further work in this area should involve an attempt to locate the chapel at Skail House and to establish the extent of the cemetery, using geophysical survey and limited excavations.

PART 2: EXCAVATION OF A CIST IN THE BAY OF SKAILL

BACKGROUND: SALVAGE WORK IN 1994

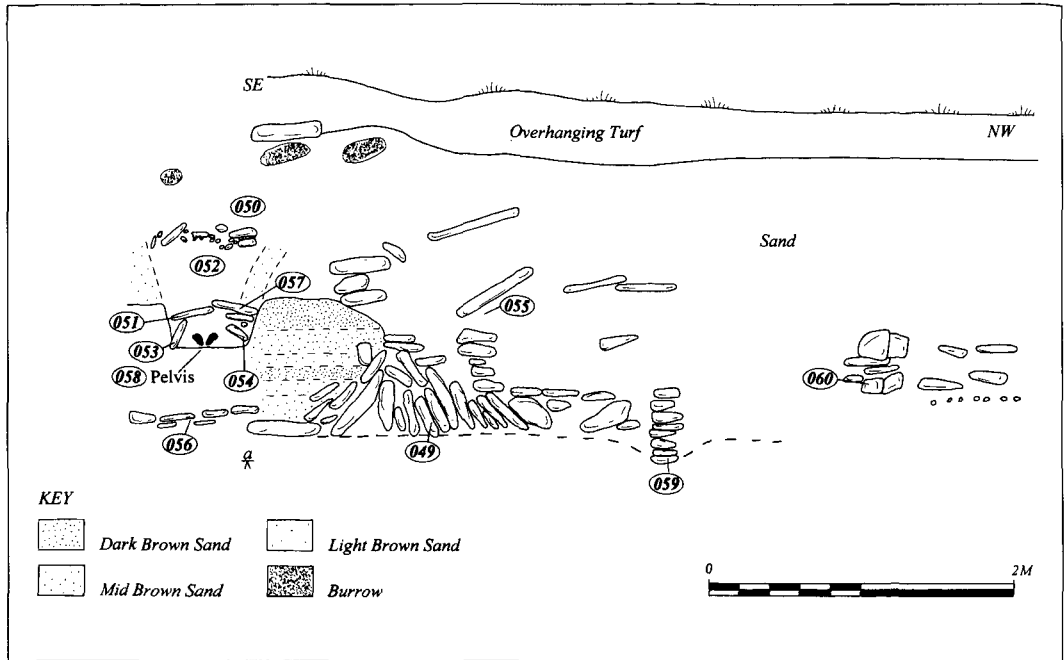
Coastal erosion in the general vicinity of the cist had long been an issue in the Bay of Skail. Morris *et al* (1985) undertook a detailed survey of this coastline between 1978 and 1982. Since then a new fence has been erected along the low cliff-edge and measurements were taken from this fence to the edge by Julie Gibson in 1994. Comparable measurements were taken in 1996 by the present writer. From this data it can be seen that between 0.3 m and 0.9 m has been lost from the cliff edge through marine erosion in the past two years.

Over the years several stretches of walling have appeared in the face of an eroding mound, interpreted by Morris *et al* (1985) as a settlement mound. Amongst this walling was a cist, first discovered by local amateur archaeologist Andrew Appleby and partly excavated by Julie Gibson. The cist pit was cut through a dark humic sandy layer, 0.4 m thick, which in turn overlay blown sand. The cist consisted of large, flat side slabs with flat cover slabs, and contained an extended skeleton. It had apparently collapsed in antiquity as the capstone was resting entirely on the legs of the skeleton. The cist was sealed by a layer of sand 0.2 m deep and above this was a layer of stones and gravel. Julie Gibson noted that the layer of stones and gravel had not been cut by the grave and that this layer extending for at least 0.2–0.3 m to either side of the cist, suggesting a low cairn. Because of a rich Viking grave found in the vicinity in 1888 (Morris *et al* 1985, 82) an early Viking Age date of c AD 800 was suggested by Julie Gibson for this grave.

TOTAL EXCAVATION IN 1996 (ILLUS 5)

Cist

The cliff section containing the cist remnants was cleaned, photographed and drawn. Pelvic bones were visible within the cist, surrounded by fallen cist slabs. The layer of stones and gravel noted by Gibson was up to 0.15 m deep in the section face and was present only above the cut for the grave. In order to excavate the cist, the upper part of the section was cut back by 0.5 m. The side slabs (053 & 054) had collapsed inwards so that they were nearly touching at the west end, over



ILLUS 5 Section of the eroding cliff-face, with the cist and other stone-built features within deep sands

the skull. The main cover slab (051) was 0.7 m long and 0.4 m wide. A single small iron object, probably a nail, was all that was found within the grave with the skeleton. The skeleton was recorded *in situ* by Julie Roberts (below), then photographed and removed.

Excavation of the skeleton revealed that it was fully articulated and intact from the cranium to the pelvis. There was no surface erosion of the cortex, or fragmentation of the bones. The body was oriented with the head in the west. It was lying prone; the left arm extended down the left side with the palm of the hand facing upwards; the right arm was semi-flexed beneath the body with the palm of the hand facing down, so that the hands were clasped together.

Other structures

Immediately to the north-west of the cist, in the same eroding section, other structural elements were visible. These were recorded photographically and drawn (illus 5). The main element consisted of groups of edge-set flat slabs (049) resting against either side of a single vertical stone to form an upturned V-shape. Disarticulated human toe bones (055) were seen above the stones. On the south-east side these stones were clearly sealed by the dark sandy layer through which the cist (above) had been cut. Four extremely small sherds of abraded, unglazed pottery (possibly prehistoric) were found within this layer. To the north-west the stones continued to some remnants of drystone walling (059) consisting of eight courses of flat stones standing to 0.45 m. Further north-west a remnant of drystone walling (060), some collapsed stones and a layer of small stone chips could be seen in section. These features generally overlay clean wind-blown sand.

HUMAN BONES

Daphne Home Lorimer

A full report on the skeletal remains described here will be deposited with the archive of the project records at the National Monuments Record of Scotland (RCAHMS). The criteria for ageing and sexing were the same as those used for a report on human remains from the cemetery at Skaill House (Lorimer, above).

The skeleton within the excavated cist was that of a young male, 18–25 years old at the time of death, and about 165 cm (5 ft 5 in) in height. The skull was dolichocranic with a cranial index of 69.2. In addition to non-metrical variations of the skeleton, a congenital anomaly was seen in the sternum. There was evidence of trauma in early youth, possibly due to carrying heavy weights and damage to the intervertebral discs. A possible pathological lesion at the left knee and development changes on the left scapula and humerus suggested the use of a crutch.

Disarticulated bone from amongst a layer of flat stones beneath the cist (056) contained a human right fourth metacarpal, proximal phalanx and intermediate phalanx, which were in articulation with each other.

Prone burial

From the Palaeolithic to the present day a small proportion of inhumation burials have been found in the prone position (Hirst 1985). Harman *et al* (1981) consider that while some may have been sacrificial, involving live burial, others may simply have been ‘carelessly laid out’ or ‘carelessly thrown in’. There are a number of burials which do not fall into these categories, however, and which may represent a final indignity inflicted on the body, either because of criminal acts, physical characteristics, fear of disease or fear of the spirit of the departed individual. In the present case it is tentatively suggested that either the body had been lying on the left side with the hands clasped in front and rolled forward or, in view of the evidence of lowly occupation and of possible disability, prone burial was a deliberate indignity inflicted upon it after death.

RADIOCARBON DATE

A radiocarbon date was derived by Scottish Universities Research and Reactor Centre (SURRC) from the right ulna of the skeleton. This would appear to be contemporary with the burial in Cist 003 at Hermisgarth, on Sanday (Downes 1997). Calibrations are based on the University of Washington Quaternary Isotope Laboratory Radiocarbon Dating Program, 1987.

TABLE 3

Radiocarbon date

Sample	Lab code	Years BC	$\delta^{13}C$	Calibrated date	
				1 sigma	2 sigma
Skeletal remains	GU-7245	1410 \pm 50	-20‰	AD 604–661	AD 550–680

DISCUSSION

The skeleton of a young man, who carried heavy loads and may have required a crutch, was buried in a cist. The body was prone, aligned east/west, and with his head to the west. The cist

was sealed by a layer of sterile sand topped with a low cairn of stones. The cairn appeared more extensive in plan in 1994 than in it was in 1996: evidently, as the section face has eroded back, the cairn has reduced in area. This suggests that it was circular in shape. No kerb was noted. There were no grave goods and the only object found within the cist was a small iron fragment (probably a nail). The alignment and lack of grave goods suggest this was possibly a Christian burial.

A radiocarbon date in the mid sixth to late seventh century places the burial within the Pictish period. Morris has noted similar dates from burials associated with cists and cairns at Sandwick (Unst), at Dairy Park, Dunrobin, and at Birsay, and suggests that these form a distinctive northern Pictish form of burial (Morris in Downes 1997). The characteristic form is 'a kerbed, low cairn overlying a mound of sand, itself over the primary inhumation in a long cist; the form may be circular or a rounded rectangle, sometimes with orthostats in the corners, if not along the sides' (ibid). These burials have been discussed by Ashmore (1980), with further examples at Ackergill, Caithness, and at Garbeg, Inverness. The northern distribution of these monuments could be challenged by the discovery of ploughed-out barrows dated to the fourth to eighth centuries at Newton, Islay (McCullagh 1989). These may be a similar form of burial adapted to a landscape which has less stone immediately available.

The absence of grave goods is not a reliable indication, in itself, that burials are Christian and Morris (in Downes 1997) has pointed out that the cairns described above pre-date the advent of Christianity in Orkney. Contact between Irish Christians and Orkney is likely to date from as early as the sixth century. The Life of St Ailbe mentions an unfulfilled desire of this early sixth-century Irish bishop to retire from the world and sail to the island of Thule, there to live alone with God (Thompson 1987, 8). St Columba's request to the King of Orkney at King Bridei's court, near Inverness, for a safe reception for missionaries to Orkney (Anderson & Anderson 1922) indicates that Christian individuals from the west of Scotland were visiting the islands from at least the late sixth century, but that an organized Christian society was not yet well established.

Thomas (1971, 154–5) has suggested that while contact with Orkney and Shetland by Irish Christians was taking place prior to the seventh century, the known Christian sites in Shetland need not pre-date the eighth century and are more Northumbrian in character. More recently, Lamb has suggested that the several St Peter dedications in Orkney may date from the early eighth century and the work of the Northumbrian missionary St Boniface (Lamb 1998).

The cist is not known to come from a cemetery, though there are other burials in the vicinity. The Viking grave discovered nearby in 1888 comprised a long cist with a male skeleton and grave goods dating from the ninth century or later. Two further burials within cists, but with no grave goods, were found above the Skara Brae settlement, further east within the bay, in wind-blown sand. These were identified as pagan, possibly Viking (Childe 1931).

Kalands (1995) has described the cemetery at Westness on Rousay where both Viking and Pictish graves appear to have been found. This cemetery was dated from the seventh to the ninth centuries. According to the excavator, the Pictish graves here could be identified by their lack of grave goods. They were slab-lined, some with grave cover slabs and marked with headstones. The Viking graves were either rectangular without grave goods or oval or boat-shaped with grave goods. The orientation of the graves, and how burials without grave goods were attributed to the Picts or Vikings, was not specified.

Lorimer (above) has discussed the possible reasons for the burial being in the prone position and has tentatively suggested that — in view of his lowly occupation and disability — this burial position was a deliberate indignity inflicted upon the body of the deceased. (Alternative suggestions include the burial of criminals, suicides, individuals who had died of a fearful disease, fear of the spirit of the deceased, or even carelessness.) Although the sides of the cist had collapsed

inwards over the body, the skeleton was intact and articulated which argues against post-burial disturbance.

A recently excavated Christian cemetery on the Isle of May, off Fife, contained three prone burials in a part of the cemetery thought to date from the eighth to the 10th centuries (James & Yeoman forthcoming). It is possible, therefore, that prone burials are not as rare as previously thought in a Christian context.

Other stone-built features seen immediately to the north of the cist clearly show that further remains, possibly including burials, are threatened by continuing coastal erosion in the bay. The wall remnants were most reminiscent of features seen at Stove Bay, Sanday, where structural remains and midden were ascribed to a major Neolithic settlement site (Bond *et al* 1995). At Stove, an upturned V-shape arrangement of slabs was interpreted as a partly collapsed internal orthostat structure.

ACKNOWLEDGEMENTS

The author would like to thank Major Malcolm Macrae, owner of Skail House, for his co-operation and assistance during both of the excavations. Thanks also to Julie Roberts, Sheila Grieve, Steve Amos, and Sue Whitworth who assisted with the excavations; to Raymond Lamb and Julie Gibson who gave enthusiastic support to the project; to Historic Scotland for commissioning the work and especially to Denys Pringle for his assistance. Beverly Ballin-Smith read the text and made many useful comments. The drawings are by Jill Sievwright.

REFERENCES

- Anderson, A O & Anderson, M O 1922 *Early Sources of Scottish History, Vol 1*. Edinburgh.
- Angel, J L 1964 'The reaction area of the femoral neck', *Clinical Orthopaedics*, 32, 130–42.
- Ashmore, P 1980 'Long cairns, long cists and symbol stones', *Proc Soc Antiq Scot*, 110 (1978–80), 346–55.
- Bass, W M 1987 *Human Osteology: a laboratory and field manual* (3rd edn). Missouri Archaeol Soc, Columbia.
- Berry, A C & Berry, R J 1967 'Epigenetic variation in the human cranium', *J Anat*, 101 (2), 361–79.
- Bond, J M with Braby, A R, Dockrill, S J, Downes J & Richards, C C 1995 'Stove Bay: a new Orcadian Grooved Ware settlement', *Scott Archaeol Rev*, 9 & 10 (1995), 125–30.
- Brooks, S & Suchey, J M 1990 'Skeletal age determination based on the os pubis: a comparison of the Ascadi-Nemeskeri and Suchey-Brooks methods', *Human Evolution*, 3 (3), 227–38.
- Brothwell, D, Carbonell, V M & Goose, D 1963 'Congenital absence of teeth in human populations', in Brothwell, D (ed), *Dental Anthropology*, 80–101. London.
- Brothwell, D 1981 *Digging up Bones* (3rd edn). London and Oxford.
- Buikstra, J E & Ubelaker, D H (eds) 1994 *Standards for Data Collection from Human Skeletal Remains*. Arkansas (= Arkansas Archaeol Survey Res Ser, 44).
- Buteaux, S 1997 *Settlements at Skail, Deerness, Orkney*. Oxford (= BAR Brit Ser, 260).
- Buxton, L D 1938 'Platymeria and platycnemia', *J Anat*, 73, 31–8.
- Chamberlain, A 1994 *Human Remains*. London.
- Childe, V G 1931 *Skara Brae: a Pictish village in Orkney*. London.
- Clouston, J S 1918 'The old chapels of Orkney, I' *Scott Hist Rev*, 15 (58), 89–105.
- Crawford-Adams, J 1987 *Outline of Fractures* (9th edn). Edinburgh.
- Davies, S J M 1987 *The Archaeology of Animals*. London.
- Downes, J M 1997 'Hermisgarth, Sanday — estigation of pyre settings and Pictish cist burials in Orkney', *Proc Soc Antiq Scot*, 127 (1997), 609–26.
- Finnegan, M 1978 'Non-metrical variations of the infracranial skeleton', *J Anat*, 125, 23–37.

- Fraser, J 1924 'Antiquities of Sandwick parish', *Proc Orkney Antiq Soc*, 2 (1923-4), 23-9.
- Grahan, H 1956 'Hypodontia in the permanent dentition: a clinical and genetical investigation', *Odont Rev* 7, suppl 3.
- Harman, M, Mollison, T I & Price, J L 1951 'Burials, bodies and beheadings in Romano-British and Anglo-Saxon cemeteries', *Bull Brit Mus (Natur Hist): Geol*, 35 (3) (1951), 145-88.
- Hillson, S 1996 *Mammal Bones and Teeth: introductory guide to methods of identification*. Gloucester.
- Hirst, S M 1985 *An Anglo-Saxon inhumation cemetery at Sewerby, East Yorkshire*. York (=York Univ Archaeol Publ, 4).
- Iscan, M Y, Loth, S R & Wright, R K 1985 'Age determination from the rib by phase analysis: white males', *J Forensic Sci*, 29, 1094-104.
- James, H F & Yeoman, P forthcoming *Excavation of a medieval cemetery and early churches on the Isle of May, Fife*.
- Kaland, S H H 1995 'The settlement of Westness, Rousay', in Batey, C E, Jesch, J & Morris, C D M 1985 *The Viking Age*, 308-17. Edinburgh.
- Kennedy, K A R 1989 'Skeletal Markers of Occupational Stress', in Iscan, M Y & Kennedy, K A R (eds), *Reconstruction of Life from the Skeleton*, 129-10. New York.
- Krogman, W M & Iscan, Y I 1986 *The Human Skeleton in Forensic Medicine*. Springfield, Illinois.
- Lamb, R 1997 'Historical Background to the Norse Settlement', in Buteaux, S, *Settlements at Skail, Deerness, Orkney*, 13-16. Oxford (= BAR Brit Ser, 260).
- Lamb, R 1998 'Field evidence for early Christianity in Orkney', in Crawford, B (ed), *Proceedings of the Dark Age Studies Conference, St Andrew's, 1998*.
- Lethbridge, T C 1931 *Recent Excavations in Anglo-Saxon Cemeteries in Cambridgeshire and Suffolk*. Cambridge.
- Lovejoy, C O, Meindl, R S, Pryzbeck, T R & Mensforth, R P 1985 'Chronological metamorphosis of the auricular surface of the ilium: a new method for the determination of adult skeletal age at death', *American Journal of Physical Anthropology*, 68, 15-28.
- McCullagh, R 1989 'Excavation at Newton, Islay', *Glasgow Archaeol J*, 15 (1988-9), 23-51.
- Marwick, H 1952 *Orkney Farm-Names*. Kirkwall.
- Miles, A E W 1989 *An Early Christian chapel and burial ground on the Isle of Ensay*. Oxford (= BAR Brit Ser, 212).
- Morris, C D *et al* 1985 'Skail, Sandwick, Orkney: preliminary investigations of a mound-site near Skara Brae', *Glasgow Archaeol J*, 12 (1985), 82-92.
- Ortner, D J & Putschar, W G J 1981 *Identification of Palaeopathological Conditions in Human Skeletal Remains*. Washington, D C.
- Phenice, T 1969 'A newly developed visual method of sexing in the os pubis', *American Journal of Physical Anthropology*, 30, 297-301.
- Proudfoot, E 1996 'Excavations at the long cist cemetery on the Hallow Hill, St Andrews, Fife, 1975-7', *Proc Soc Antiq Scot*, 126 (1996), 387-454.
- Rackham, J 1994 *Animal Bones*. London.
- RCAHMS 1946 Royal Commission on the Ancient and Historical Monuments of Scotland *Inventory of the Ancient Monuments of Orkney and Shetland*. Edinburgh.
- Reed, D 1995 'Excavation of a cemetery and putative chapel site at Newhall Point, Balblair, Ross & Cromarty, 1985', *Proc Soc Antiq Scot*, 125 (1995), 779-91.
- Resnick, D & Niwayama, G 1988 *Diagnosis of Bone and Joint Disorders*, vol 5 (2nd edn). Philadelphia.
- Roberts, C & Manchester, K 1997 *The Archaeology of Disease*. New York.
- Roberts, J A 1997 Analysis of skeletal remains from Chapelhall, Inellan, Argyll (= unpub archive report by Glasgow University Archaeological Research Division, no 196.2).
- Roberts, J A & Battley, N 1997 Skeletal Remains: Isle of May Excavations 1995-96 (= unpub archive report by Glasgow Univ Archaeol Res Div, no 101.6).
- Rogers, J & Waldron, T 1989 'Infections in palaeopathology: the basis of classification according to most probable cause', *J Archaeol Sci*, 16 (1989), 611-25.

- Saunders, S R 1989 *Nonmetric Skeletal Variation: reconstruction of life from the skeleton*. New York.
- Thomas, C 1971 *The Early Christian Archaeology of North Britain*. Oxford.
- Thompson, W P L 1987 *History of Orkney*. Edinburgh.
- Thompson, W P L 1995 'Orkney farm-names', in Crawford, B E (ed), *Scandinavian Settlement in Northern Britain*, 42–63. Leicester.
- Trotter, M 1970 'Estimation of stature from intact limb bones', in Stewart, T D (ed), *Personal Identification in Mass Disasters*, 71–88. Washington, D C.
- Ubelaker, D H 1989 *Human Skeletal Remains* (2nd edn). Washington, D C.

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